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Universities of industry?

In few countries do industry and higher education have such a distant hands-off relationship as in Britain. Universities, less so polytechnics, have never been able to shake off their platonic inhibitions about "mere" training and "useful" research, perhaps because both can be interpreted as threats to their academic freedom and institutional autonomy. Industry on its side has a stubbornly philistine streak that blinds it to the advantages of a more highly skilled workforce and to the benefits of the scientific knowledge produced by higher education.

Wait a minute! It is almost possible to hear the cries of protest already, for such a sweeping statement is bound to provoke widespread and sincere denials. After all, many universities were established in the middle and later nineteenth century by local civic and industrial élites as powerful instruments of, largely industrial, modernization. They may have developed a few airs and graces since then but their essential nature, after proper allowance has been made for the evolution of society and the economy over the last century, has not really changed.

Certainly it is possible to compile a long list of the most fruitful collaborations between industry and higher education today - in professional training, technological education, and both pure and applied research. Nor is this collaboration necessarily confined to (natural) science and technology. The social sciences and even the humanities have a similarly functional aspect if the concept of "industry" is broadened to include the whole political economy.

Yet there is still a case to answer. There still remains a nagging, nagging truth in the original definition of the general relationship between higher education and industry. It may have much more to do with the ethos of universities than their detailed operations. Yet such an ethos can be

influential in forming the attitudes of graduates, even or perhaps especially those who go into jobs in industry. Our very language betrays some powerful prejudices. "Training" is distinguished, in a derogatory way, from "education", while "academic" is widely used as a pejorative adjective to describe the impractical or even anti-practical bias of which much of higher education is frequently accused. Yet the significance of the distinction that is being made by contrasting education and training often eludes the non-British, just as few French or American industrialists can be found who use the word "academic" in its particularly loaded English way.

This suggests that what is really wrong with the relationship between higher education and industry are not its operational details but the context of values in which these details have to be worked out. The implication therefore is that experiments in closer collaboration between the two must pay as much attention to the symbolic as to the practical, which may be where the "Education for Capability" campaign can play an important part.

The proper purpose of the conference on industry-higher education links being organized jointly by the Institute of Manpower Studies and *The Times* on July 7 may need to be assessed in similar terms. The value of such events rests as much in their success in building a stronger sense of a community of interest, which will require as much flexibility of outlook on the part of industry as of higher education, as in disseminating the advantages of particular forms of collaboration.

Governments, Conservative, Labour, or anything in between, are increasingly preoccupied with the need to bring industry and education closer together. Mr Callaghan's Ruskin speech in which he appealed for greater

relevance in schools expressed ideas that have to some extent found policy expression in Mr Tebbit's new plan for vocational courses for 14-year-olds and the work of the Manpower Services Commission (which, just to close the political circle, was of course a Labour creation).

Yet so far the politicians have been cautious, far more cautious in the case of higher education than they have been in their approach to the education and training of 16 to 19-year-olds where the need for reform seems more urgent. Perhaps, again without respect to party, a more radical approach may eventually be adopted. The rumoured recommendation in the forthcoming Advisory Council for Applied Research and Development report for an "industrial seedcorn fund" of £10m a year, probably administered by the Department of Industry, to encourage closer industry-higher education collaboration, may point in the direction of future change, if it is not side-tracked into the dead-end of privatization.

But perhaps an even more radical proposal should be placed on the agenda. Why should we not create a special sector of direct grant institutions on the pattern of France's *grandes écoles* which would provide the highest level professional and technological education? Perhaps the long forgotten Robbins plan for Special Institutions of Scientific and Technological Education and Research (SIS-TERs) provides a better home-grown model than the *grandes écoles* with their neglect of research. Perhaps some of these institutions could even be directly funded by the Department of Industry or other non-education ministry rather than the Department of Education and Science. To revert to the earlier theme, certainly no one could mistake the message or confuse the symbols of such a radical experiment.

Laurie Taylor



Look, let me get you just one more while I'm at the bar. These damn staff-graduate seminars are enough to make anyone thirsty.

No, really, Professor Tremlett. Thank you, but no. I mean, I think it's absolutely disgusting.

What's that, sir? I mean, what's the logic of it?

I really can't say, I'm afraid. If you ask me, there's some sort of conspiracy.

I'm sorry? Conspiracy. Some sort of secret conspiracy.

Ah. Because, you see, it would actually suit the gummint very well.

The "gummint"? I'm afraid I don't quite see... The gummint. The Conservative gummint.

Oh yes. Silly of me. The gummint. Yes indeed. It would suit them very well. Very well indeed. Oh yes.

How's that, Professor Tremlett? Well, it's quite simple really. It all started with the Hishtree Man.

Did it? Oh yes. It all fits together. No problem. You're going to have big cuts in universities? Right?

Yet, I think I... And so you get the public on your side by forcing the television to put on a play which suggests that your average university lecturer divides his time between radical politics and promiscuity.

Promiscuity? Promiscuity?

Ah yes, of course. Silly of me. Promiscuity. And then a couple of weeks before the general election, with the AUT beginning to make a fuss about your record in higher education, you do it again. Twice. Do you hear me? Twice.

Twice? First of all, you fake a few old diaries and make a bit of a charity out of a top professor.

Well, I think that's a little... And then worse of all.

Worse of all? Oh yes. Worse of all. With the election looming you put on general release a film called *Educating Somebody* or *Other* which suggests that your normal hardworking don is so bowed down by the gaps between his personal hopes and actual repetitive life, that he spends most of his time three sheets to the wind. Now what do you think of that - whatever your name is? What does that point to?

Well, there's seems only one word for it, Professor Tremlett. What's that? What's that? Conspiracy. Exactly.

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Sir Peter reveals future of early retirements

by Ngalo Crequer

Limited tenure, early retirement up to the year 2000 and scholarship rather than research underpinning teaching - this was the future seen by Sir Peter Swinnerton-Dyer, in his first public speech as future chairman of the University Grants Committee.

He told the Association of University Teachers council at Imperial College, London on Saturday that for the next ten years there would be almost no natural retirements of academic staff in the universities and so almost no vacancies for new recruits. Without new teachers for ten years the universities would not be worth keeping open. "At the very least early retirement will have to continue till the end of this century," he said. When pressed he added: "I would not necessarily agree it will be entirely voluntary."

He said scholarship was the true underpinning of good teaching, and there was not enough money to support research in every department although he did not envisage first and second class universities. In a typical university there were good and less good departments but he did envisage there would be departments where research flourished and others where it would be at a pretty low ebb.

In the arts there was no issue as research comes for free. But universities would have the problem of how to cherish their best departments. On tenure all he would say was: "I believe the scheme of tenure at a typical major American university is probably the right one, and in British universities it goes too far."

On the problem of universities knowing UGC criteria when applying cuts he said: "Ted Parkes (current UGC chairman) said recently he would wish the UGC to be more open but this was only possible if he were given more staff. I do not know enough about the UGC fully to understand that remark. I would wish to make it more open than it is. The UGC will have no choice. From now on there is an inescapable comparison between it and the National Advisory Body. The UGC cannot afford to be less open than the NAB."

He was applauded when, in response to a question on whether the UGC took Oxford's endowments into account, he said: "It is very difficult for any outsider to judge how the UGC does it sums" and he speculated whether an insider would be able to discover.

The council was told the UGC could not be a pressure group for the universities. It needed to be trusted by the Secretary of State. There needed to be selective intervention "and the fact that the intervention probably takes the form of bribery does not affect the principle."

Leverhulme calls for more students, shorter courses

by John O'Leary

An end to the specialized, three-year honours degree, the partial introduction of student loans and a new body to monitor standards in the universities are among the major changes proposed today in the final report of the Leverhulme inquiry into higher education.

The two-year project, which has produced 11 volumes of evidence and argument, represents the most comprehensive examination of higher education since the Robbins committee two decades ago. The final report is signed by leading industrialists as well as important figures inside the system and will be studied closely by incoming ministers.

Although the report does not propose the sweeping reforms which many had expected, it does call for a change of direction away from what is regarded as excessive specialization. Two-year pass degrees, which would be the upper limit for mandatory, means-tested grants, would become the basic currency of higher education.

Courses would be broader than current degrees, preparing the way for subsequent specialization, which would be necessary especially in professional areas such as medicine and engineering. There would follow three layers of higher study, one for honours



Leverhulme inquiry, four page report, pages 1 to 14 leader, back page

degree or professional diploma, a second for one-year courses at masters level and the third for doctorates. Students on the higher-level courses would have to rely on Government-backed loans unless they won scholarships for the exceptionally talented. Grants in areas of special national or local need, attracted sponsorship from prospective employers or qualified for grants for those suffering from long-term unemployment to acquire new skills.

A note of dissent has been entered by Sir Bruce Williams, director of the

Technical Change Centre, who doubts that two-year courses would give a credential recognized by employers and opposes the restriction of mandatory grants.

The report expresses concern for standards as competition for students and resources increases as a result of population changes for the rest of the century. As a safeguard, it suggests the establishment by the universities of a review body which would collaborate, and in due course possibly combine, with the Council for National Academic Awards.

Far from recommending the end of the binary system itself, the report identifies breadth and diversity as sources of strength in the British system and resists immediate moves towards a merger of the University Grants Committee and the National Advisory Body. This remains a long-term option but the first task is said to be the settlement of common funding criteria for the two sectors.

The report also proposed the establishment of a centre for the study of higher education management and policy, and increased specific funding for research. "Universities and polytechnics are urged to formulate explicit research policies, concentrating more on designated research centres."

Now showing: good vibrations

Heriot Watt University has launched a degree to be taught entirely by video. The two year course leads to an MSC in acoustics, vibration and noise control. Its video lectures, together with course notes and tutorial exercises, are based on the university's conventional one year full time MSC. The course, which will be offered throughout the UK from October, at a cost of £1,350 has been under preparation since 1981 in the department of building. It is designed for people wanting a career in any branch of engineering in the factory, inspectorate, in building control and environmental health departments.

Dr R K MacKenzie senior lecturer in the building department, and the course's director of studies, said that many people in private industry, defence establishments and local authorities, mostly far from Edinburgh, had asked if the university could provide a correspondence course.

Studies will be backed by tutorial help from lecturers by correspondence and telephone and the second year includes a research project.

Tenure comes under siege as universities increase pressure

University attempts to weaken tenure increased this week with a proposal from Reading to dismiss staff in the case of "financial exigency" and charges that at least five universities are making all new appointments on fixed-term contracts.

At Reading, a joint university/Association of University Teachers committee has agreed provisionally that contracts for new staff should allow dismissal for redundancy for "financial exigency". As *The Times* went to press, the local AUT was meeting to press the proposal and the officers were recommending acceptance, although the national AUT was pressing deferment at least.

Under the proposals, financial exigency "should be demonstrably a real and fundamental crisis and not a temporary problem. Compulsory redundancy would be a last resort when all other feasible economies and savings had been made and ways of increasing income considered."

The procedure would be: the vice

chancellor, with the concurrence of the president of the AUT, would look at accounts and all other information and decide, expenditure exceeded income. If they failed to agree, a panel would be set up. If there was still no agreement the vice chancellor and AUT would report separately to council, which would decide by simple majority whether financial exigency existed.

There would be a general invitation to staff to retire early, the deans would decide how many staff in each department should be shed, and they would eventually decide which individuals should have their contracts terminated.

The whole procedure would take about 12 months and the recommendation would be that staff get one year's salary compensation.

Meanwhile, at least five universities are making all their appointments on fixed term contracts, according to the AUT. In two cases - Stirling and Warwick - the they have been introduced by the university authorities as an interim measure pending the outcome of the national debate on tenure.

But some union leaders fear that the acceptance of five or, as in Warwick's case, 10-year contracts may in itself set the pattern for the national system if it is imposed.

At Stirling the university authorities have refused to go to the Advisory Conciliation and Arbitration Service to resolve the question of the right to negotiate on the issue. The university believes that as the proposals are interim, negotiation is not needed, while the AUT believes it is.

The AUT has received a letter from court saying a special committee is being set up to that the matter "can be continued on page 2"

General election puts NAB cuts exercise back by six weeks

Polytechnics and colleges this week won an unexpected summer break from planning their 10 per cent budget cuts thanks to the general election. The committee of the National Advisory Body deferred a decision on the number of students to be enrolled in the public sector in the next two years known. And the result will be six weeks slippage in the timetable for the exercise.

Board recommendations of marginally less intake but increased numbers overall were never discussed by the committee, which was chaired by Mr William Waldegrave, under secretary for higher education, despite the election campaign. The debate will take place at next month's meeting, which is likely to be postponed from its scheduled date of June 16 to enable the new administration to take stock.

Almost all the returns from institutions and local authorities have now been analysed by NAB officials, who say that they imply total numbers of 258,000, compared with the board's alternatives of 252,000 or 261,000. The delay will give time for further clarification of some responses.

Consultation on the major changes to be proposed by the NAB board was to have taken place over three weeks in July. With this now impossible, the committee decided that local discussions should be put back to September since August was considered impractical.

The board's residential meeting to make final recommendations, set for the first week-end of September, will now start on October 14 and committee ratification of the final plan will take place in mid-November, rather

than in October. The official announcement of allocations by the Secretary of State for Education is still expected before Christmas.

The National Association of Teachers in Further and Higher Education this week called for additional money for research in colleges and polytechnics. The union opposed recommendations from NAB that a proportion of existing resources should be held back for research but supported the principle of a central fund for research.

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election '83

Union hears opposition views

by David Jobbins
Opposition leaders have muddled attacked the Government's policies on the universities in statements circulated by the academics' union.

The Association of University Teachers asked for comments from Mr Neil Kinnock, Labour's chief education spokesman, and Mr Alan Beith, his Liberal Party counterpart. It has promised its 34,000 members that others will be provided when they become available.

Liberals deplore the Government's "misuse" of the Privy Council to attack

tenure by the back door. If Sir Keith Joseph wants to abolish it, he should have an open debate, Mr Beith says.

"We would be very reluctant to surrender a system which is designed to protect university teachers from the very kind of politically motivated pressures which this Government is so fond of applying," he comments.

The statement attacks the significant cut-back in university access and says firmly the party wants to see higher education re-opened to all those who want to benefit from it and have the ability to do so.

Universities and polytechnics should

develop their part-time degree work and academic transfer. Student grants would eventually be integrated into the tax credit system.

Liberals reject the University Grants Committee as an "unacceptable" body, and wants it to be reformed, with elected representatives from the institutions, students, staff and the community. "Liberals do not share the deep conviction of Sir Keith Joseph and Dr Rhodes Boyson that quantity is the enemy of quality in higher education," Mr Beith concludes.

Mr Kinnock comments that a further period of Thatcherism would ensure prolonged contraction of the universities "and all of its destructive consequences for opportunity, scholarship and research."

Labour is committed to reversing the cuts made since 1980 but in return is seeking a commitment from the universities to respond positively to policies for extending access to all those who can use the facilities of university education "beneficially."

One consequence of the pledge to introduce a new right of access to post school education, Mr Kinnock says, will be direct access to university.

"More usually we shall be encouraging the provision of preparatory and foundation courses leading to admission to degree level courses."

Mr Kinnock promises progress towards maintenance awards paid directly to students with a tax claw back, with needs-related treatment for mature students.

The party envisages a reformed universities council sharing a secretariat with the National Advisory Body on public sector higher education and the proposed development council for adult and continuing education.

Harking back to the controversial policy document on post-18 education, Mr Kinnock says: "The particular problems caused by the special privileges of Oxford and Cambridge and the over-representation of private schools in their intake can be overcome by persuasion with the ultimate sanctions of finance and legislation."

The Social Democrats referred the union to their own policy document on education, which ranged widely over higher education. The conservatives referred AUT to their manifesto, stating they had no detailed policies on the universities.

Maxwell saves general election surveys

by Paul Flather

Mr Robert Maxwell, the businessman with interests in publishing, printing, politics, and football, has stepped in at the eleventh hour to save a vital series of academic research dating back 20 years.

He has pledged £50,000 to help fund the internationally-renowned general election surveys usually supported by the Social Science Research Council.

This year the SSRC decided it could not afford the required £150,000. The decision last February caused widespread dismay and shock. The SSRC has been besieged with letters from MPs, eminent journalists, and leading academics in the field, who are contesting the decision.

The strength of the surveys has been their continuity since 1963. Certain kinds of questions have remained constant, allowing proper comparisons of trends and changes in British voting behaviour.

The council's officials were this week trying to finalize details of the deal to allow the survey to take place this year. Preparations have to begin almost

immediately so that the questions can be put in the weeks following the polling day on June 9. A team from Oxford University is likely to be used.

"The SSRC will also have to extract agreement from the Department of Education and Science, which has to assent formally to any spending decision more than £50,000. Usually this is a formality but in this case speed and timing are essential."

Professor Ivor Crewe, professor of politics at Essex University, who worked on the surveys in the 1970s, said it would be very serious if there was no survey. "We will have lost part of the time series which really is the great virtue of the study."

Most academics in the field feel that the amount of money involved, is very little compared to some of the grants earmarked for economic forecasting work.

The original decision not to fund an election survey was taken partly because of lack of funds, and partly because the three applications from teams at Oxford, Strathclyde, and the London School of Economics, were not considered innovative enough.

Students get postal vote

Students at Stirling University, who will be on vacation at the time of the general election, have won the right to a postal vote in Stirling.

The court ruling is the first of its kind. Past cases have involved students who are in colleges or universities but wish postal votes for their home constituencies.

Six students appealed to Stirling Sheriff Court after their applications for a postal vote were refused by Central Region's assessor. Their term ends on May 31.

Sheriff Henderson said in a written judgment, he felt the crucial point was that the students were required to vacate the university residences.

The sheriff also held that it was unreasonable to expect students to come to the polling station if this involved expense and inconvenience.

Sir Keith has student rival

A polytechnic student union president is to oppose Sir Keith Joseph in his Leeds North-East constituency, standing as a candidate Against Cuts in Education.

Mr Paul Holton, of Preston Polytechnic, is using the election to point out the effects of cuts on polytechnic universities and student awards.

Oxford Polytechnic students have dropped plans to put up candidates in the city's two seats - one of them marginal. There had been considerable pressure on backers not to go ahead because of the possible effects on the Labour Party. The cost of the campaign was also a factor which weighed heavily.

Candidates at Leeds NE are: Sir Keith Joseph (Conservative); P. Cryan (SDP/Alliance); P. J. Holton (ACE); R. Sellar (Labour); and E. Tibbitts (Anti Corruption).

WEA hear evidence of political bias

by Karen Gold

Evidence exists of bias amounting to indoctrination in some Workers' Educational Association classes, a WEA member alleged at the association's biennial conference in Huddersfield.

Mr Alfred Neville of Barnet said: "It's my branch's contention that evidence does exist of students being given one-sided tuition." He proposed a motion reminding tutors of political subjects that teaching should be balanced and non-partisan.

One branch member had been to a day course on the Employment Act at which students were told how reactionary the legislation was, but given no reason for its enactment, he said.

The senior tutor, on being asked about this, had suggested that a certain amount of bias was only to be expected, since tutors of trade union classes would sympathize with the views of the organized Labour movement.

"If this sympathy leads tutors to give only one side of any topics, then they give their students a biased interpretation. They are indoctrinating their students and not educating them," Mr Neville said.

"How prevalent, one can ask, is this sort of confusion between education and indoctrination? I have met tutors who do show bias, and there is no harm whatsoever about a tutor making no bones about his sympathies, provided

he gives other views. But some tutors just don't, and I think many students in this hall could give their experiences of that."

Mr Peter Francis said he was the student who had attended the Employment Act course. "What I heard was one side of the argument," he said. "The danger of political classes is this: if your tutor's bias is the same bias as the students, then it will go unchecked because they will not appreciate what the other position is, and it's the job of the association to see the other position is put."

But allegations of bias were insulting and dangerous for the association, said Ms Rhona Hazell of the West Midlands district. "Students who are adults are well able to challenge any ideas put forward by the tutors. I see the role of tutors as challenging assumptions and ideas. That may mean sometimes putting forward a controversial argument," she said.

If everyone present in a class owned up to their own bias, then that was a healthy position, said WEA vice president Dr Elizabeth Monkhouse. "What's unhealthy is someone who purports to teach in an unbiased way perhaps concealing bias". She proposed that the conference avoided voting on the motion by moving to "next business" which it did by a large majority.

Public peace, private battle over unemployed

Last-minute moves to settle the association's dispute on education for the unemployed meant only minor public scuffles took place at the conference between the national executive committee and tutor-organizers.

But the main disagreement between them remains unresolved and is likely to flare up again. It began when the tutor-organizers, members of the Association of Scientific, Technical and Managerial Staffs, vetoed proposed collaboration with the Manpower Services Commission in classes for the unemployed, on the grounds that neither their conditions nor academic freedom would be safeguarded.

Although the MSC scheme is now unlikely to go ahead, the dispute has turned into a clash over how much say ASTMS should have in WEA educational policy. The two sides both met the day before the conference, and agreed to agree on one statement - agreed on two potentially contradictory ones on the understanding that the matter would not be fought out during the conference.

The national executive's statement, which has the backing of ASTMS centrally, states that members of ASTMS have normal bargaining rights on trade union matters with the WEA, but on educational policy must be "prepared to take the same responsibilities as other members of national and district bodies and to accept the collective decisions of those bodies".

The ASTMS workers education section statement reserves the right for union members to formulate policy proposals and lobby for them, to take

an independent line where - as in MSC negotiations - trade union approval is required, and for ASTMS and the NEC to recognize that policy cannot always be separated from terms and conditions.

Professor Bernard Jennings, in his presidential speech to the conference, emphasized that the WEA had never compromised on freedom of discussion in its classes and has made that clear to the MSC in negotiations.

Nevertheless the ASTMS members had made an independent decision not to participate, he said. "This is a matter which must cause great concern to a democratic, voluntary movement."

In a later debate on the MSC, ASTMS representative Peter Caldwell argued for close scrutiny of potential MSC influence in adult education. "What do people in the MSC want out of an organization like the WEA?" he asked.

The MSC's adult training strategy paper published last month showed an extension of centralist control, training for jobs and skills that might no longer exist, and some education for the long-term unemployed who had become totally demoralized. "We would want to look very carefully at developing a funding dependence on an institution with those types of aims," he said.

The Government recently warned the WEA that it could not expect its grant to be increased, increased, increased. Dr Bill Hughes told the conference. This meant it could not afford to fill a vacant national officer's post, or set up working parties on political education or establish adult education campaigns, he said.

NHS parity demanded by v-cs

by David Jobbins

Vice chancellors are demanding a commitment from ministers to fund the difference between the 3.5 per cent cash limit for university salaries and the cost of the 4.7 per cent award to National Health service clinical staff.

They believe they are obliged to pay the award, approved by the Prime Minister in the week the election was called, to university clinical staff.

But they want parity of treatment with the NHS, which is to receive central government funding to bridge the gap.

Negotiations are about to start between the university employers and organizations representing 3,000 clinical staff and the vice chancellors are convinced that a failure to maintain parity with the NHS would have serious repercussions.

But one of a clear answer from ministers during the course of the election campaign are small. Vice chancellors are already under extreme financial pressure because of the 4.7 per cent settlement for academic staff and the 4.5 per cent award to technicians, which together leave the universities some £8 million to find above the cash limit.

Negotiations are about to get under way with university white collar and manual staffs - and probable settlements of about the going rate will add substantially to the shortfall.

University academics have already ratified their deal, and polytechnic and this week college lecturers accepted reluctantly a 4.5 per cent award with a £51 flat rate element.

At least one of the National Association of Teachers in Further and Higher Education's 14 regions flatly rejected the provisional settlement because of its failure to make gains on structural elements of the claim.

Mode B fees agreement

Local authorities, in particular Greater London boroughs, are to be allowed to charge substantially higher fees for Youth Training Scheme Mode B courses than Mode A as a result of a long-awaited agreement ratified this week.

The agreement between the local authorities associations and the Manpower Services Commission had been held up by commission officials' refusal to accept that Mode B schemes - those not sponsored by employers and which will cover an anticipated 165,000 young people - rated a higher payment.

The delay has caused some controversy in local authorities and their colleges, already angry at the low rate for Mode A, set at £14.50 an hour.

Now under the agreement, Greater London boroughs, at their special request will be able to charge the MSC £22.50 per hour for classroom work and £26.85 for practical/workshops. Two rates have been set because it was impossible to reach agreement on a composite fee.

Other authorities in England and Wales will be able to set fees of £20.70 per hour for classroom work and £24.70 for workshops.

Tory GLC pledge leaves confusion over ILEA

by Felicity Jones

Confusion has arisen over whether the Tories plan to abolish the Inner London Education Authority along with the Greater London Council as part of the proposals put forward in their election manifesto, or to reform it.

The manifesto says that the GLC "as a wasteful and unnecessary tier of government" would be removed. Services which need to be administered over a wider area - such as police, fire and education in inner London - would be run by joint boards of borough representatives.

But Professor David Smith, Tory leader at the ILEA, said he was unclear as to what exactly the proposal involved. "I presume that what they are talking about is a new board composed of borough councillors to replace the ILEA. But as I was not consulted it is difficult to say. I suspect that the future of the ILEA did not figure large in their minds."

His preference is for directly elected representatives from the boroughs who would be elected solely on an educa-



ILEA leader Frances Morell. Will her job go?

tion ticket. Professor Smith said that he would be putting his views forward in any discussions following a Tory win in the general election.

There has been a lot of discussion over the past three years about the future of the authority and a consensus has developed within the Department

of Education and amongst HM Inspectors that London is too big to be handled by individual boroughs. But the manifesto proposal has been couched in such vague and ambiguous terms that it could be interpreted as a proposal for one education board or several boards for different regions of the inner London area.

Mr Neil Fletcher, recently elected chairman of the further and higher education committee of the ILEA, said the Tories were looking both ways. "There are votes to be gained by pledging to abolish the GLC but it would be to their electoral disadvantage and lead to acrimony if they talked about abolishing the ILEA."

Meanwhile, the Save ILEA campaign has been resurrected. Teachers and governors' meetings are being organised and prospective parliamentary candidates are being questioned to find out their intentions towards the authority.

The Tory plan is most likely to be some sort of proposal to increase the number of borough councillors.

Election setback for Natfhe right wing

The right wing on the executive of the college lecturers' union has received a severe setback on the eve of the annual conference which opens in Blackpool tomorrow.

The immediate past president of the union, Mr Malcolm Lee, has failed to gain an elected seat on the executive of the National Association of Teachers in Further and Higher Education - a dramatic break with precedent.

And Dr Peter Knight, deputy director of Portsmouth Polytechnic and one of Natfhe's two representatives on the National Advisory Body on public sector higher education, has also not been re-elected.

Dr Knight's position on NAB is now almost certain to be raised during conference debates on motions calling for the union's withdrawal from NAB, a move which will be firmly resisted by

the union leadership.

Other faces missing from the executive include Mr Jim Richardson, the union's last left-wing president, who has chosen not to seek reelection, and Ms Tracy Leman, who did not seek reelection after taking up a new job in a different region.

Ms Leman is Natfhe's first representative on the TUC women's advisory committee, a position she is expected to retain. But it seems unlikely she will be able to continue as chairperson of Natfhe's own women's committee.

As well as expressions of concern at the implications of the Youth Training Scheme for colleges, there is likely to be a rearguard action over the proposed disaffiliation from the Campaign for Nuclear Disarmament.

Despite a consultation exercise that produced a 2-1 vote against continued affiliation, left-wingers are expected to argue that for Natfhe to leave CND would be regarded as a major coup for Mrs Thatcher by the media.

An attempt to commit leaders of the college lecturers union to campaign for an "early end" to the Conservative Government has been blocked on legal advice.

An amendment to a conference motion calling for a campaign against policies which resulted in unemployment stated that an early end to the present Government was a "precondition" of a return to mass unemployment and went on to call on the executive and union membership to work towards that end. Steering committee organization business for the union's conference in Blackpool this weekend took legal advice and concluded it fell outside the constitution.

Universities increase pressure

continued from front page

discussed very fully with the purpose of discussing it with the AUT.

The committee is made up of Lord Stewart, chairman of the university court, the principal, Sir Kenneth Alexander, Mr David Miller, a court member and chairman of the establishments committee, and Professor J. M. G. Cowie, a court member and head of the chemistry department.

Mr John Akker, deputy general secretary of the AUT, said: "We hope very much this matter can be settled internally at Stirling without the AUT having to put forward any sanctions." The AUT was to hold a general meeting this week.

The court has also proposed a long term policy of non-tenured posts for all new staff, but this is to be discussed on June 10 at the next meeting of the joint negotiating and consultative committee.

At Warwick, the 10-year contracts include a clause promising that the terms will be changed when there is agreement on the shape of tenure at national level.

The university has eight staff currently in post on 10-year contracts with a further 22 currently or about to be advertised. Among those already in post are two chairs - the professors of arts education and biological science.

Correction

The academic board of the Polytechnic of North London did not decide at its meeting of May 11 not to cooperate with a joint inquiry with the Council for National Academic Awards into allegations against certain courses, as reported in the last issue of THES. A decision was deferred until the following meeting which was held on May 25.

Help in sight

Literacy and Partially Sighted Adults is a handbook produced by the Adult Literacy and Basic Skills Unit, for experienced literary tutors.

Beloff remains firm over bias accusations

Lord Beloff has refused to apologise for accusing the Industrial Relations Research Unit at Warwick University of trade union bias.

He said this week he did not want to comment on the Berrill report, which cleared the unit.

Lord Beloff, who is vice-chairman of the advisory committee of the Conservative Research Department added that he had not been particularly moved by the report, and had "long lost interest" in the subject. He said he still believed that supporting research units like the Warwick one, or the Ethnic Relations Research Unit at Aston University, was not the best way for the Social Science Research Council to channel public funds.

"I can see why other research councils in the sciences support such units. But I am not convinced the analogy in social sciences is right," he said. He agreed he did not know much about

industrial relations or the Warwick unit, but he had "acted as a way of ventilating the issue". The way the inquiry was handled up meant this issue was not really gone into, he claimed.

The Campaign for Academic Freedom and democracy has asked Lord Beloff to make a public apology for accusing the unit of bias without being familiar with its published work.

A letter in *The THES* this week from Professor John Saville, emeritus professor of economics and social history at Hull University, and chairman of the CAPD states that for most readers of the report "there is likely to be a total denial of Lord Beloff's credibility in the affair".

The report was published last week after an investigation headed by Sir Kenneth Berrill, a former head of the Central Policy Review Staff.

College warned about history bias

Warnings of bias in history teaching and in students' work at Northern College in South Yorkshire have come from Her Majesty's Inspectorate, in the first HMI report published on an adult residential college.

In the liberal and gateway studies course, nearly all political theorists studied advocate "anarchy, revolution or radical reform", the report says.

In marked history essays, the Inspector found "Points of content... that appeared to meet with the views of tutors

receive a tick in the margin; only occasionally are wildly exaggerated prejudices commented upon or evidence required to justify them."

There is emphatic praise for balance and objectivity in Northern's other two full-time two-year diploma courses. The principal, Mr Michael Barratt-Brown, said that many of the report's recommendations had been put into practice since the Inspectorate visit in 1982.



A travelling exhibition mounted by Britain's largest white-collar trade union to emphasize the value of the public sector of the economy makes its first stop at Sussex University. Part of the "Put People First" campaign by the National and Local Government Officers Association. It also visited Kent at the start of a tour of campuses.

Political row at Brunel

Brunel University student union claimed this week that the university had shown "unashamed political bias" in nominating four Conservatives for court. To "reinstate the political balance of court" they proposed five other people, members of the Labour Party, but the nominations were rejected by university council.

But Mr David Neave, Brunel University secretary, dismissed the charges. He said the Brunel charter ruled that no political test could be applied. "Unless members of council knew these people's affiliation, there is no way of knowing whether they were Conservative, Labour or Alliance."

What we look for is people who show any interest in the university. The council had accepted the nominations of Conservative junior ministers Selwyn Gummer and Geoffrey Pattie and two Conservative councillors, the deputy leader and education committee chairman of Hillingdon borough.

The students put forward Mr Jack Straw, Labour MP, three Labour councillors from Hillingdon, and a former Brunel student.

Mr John Flanagan, president of the students' union, said: "It was the most unashamed piece of political bias I have ever witnessed. This is a clear attempt further to politicize the political balance of the court."

Paisley asks for reprieve

Paisley College's governors and academic board have asked the Scottish Education Department to suspend its decision to axe the college's social science and applied social studies degrees.

This muted statement is the first official response from the college since the SED made the surprise announcement two months ago. The governors are to discuss the decision with education department officials within the next fortnight.

The two statements do not directly attack the decision itself, but the way in which it was made.

The governing body says that while it recognizes that "no policy decision is immutable", it does not feel that new circumstances have arisen which warrant the proposed changes.

The academic board adds that changes in provision should be made only after a national review, and all interested parties should be given an opportunity to comment.

A statement issued by Professor John Foster, head of the politics and sociology department, and Mr Jim Adams, acting head of social studies, stresses that an independent, public review is a "minimum demand". They add that the decision has been an attack on academic freedom.

Conference

CONFERENCE

Industry Education Interactions
at the Graduate and Senior Technician Level
on 27-29 June 1983

at Polytechnic of the South Bank, London

Plenary Lecturers will include, Dr S. B. Kumta (Director Technical Institute, Gujarat), Dr G. Tolley (Director, Open Tech), Dr R. Kulkarni (Schroff Institute, Bombay), Dr M. D. Robinson (Centre for Professional Advancement, USA).

Further details from Dr J. Douek,
Science Department,
Luton College of Higher Education,
Luton LU1 3JU.
Tel: 0582 34111, Ext. 230.



Prince Charles talks to the chancellor of Oxford University, Sir Harold Macmillan, who is 89, outside the Sheldonian Theatre after receiving an honorary degree of civil law last week. The prince also visited the Ashmolean Museum, celebrating its 300th anniversary, and the university's examination schools, founded in 1882.

Forestry professor resigns in protest

by Paul Flather

An Oxford University professor has resigned his post because "the exciting prospects" of teaching agriculture and forest sciences have vanished.

Professor Duncan Poore, professor of forest science, said he went to Oxford in 1980 from his post as a consultant in land use because he was attracted by the prospect of combining the teaching of agriculture and forest science in one course.

The joint course run in Oxford since the late 1960s has now been abolished following a recommendation made by the University Grants Committee in its letters sent out in July 1981. From next year the course will be incorporated in a new applied biology degree.

"I am sure this is an educationally retrograde step," Professor Poore said. "The two professions of forestry and agriculture have diverged enormously, with the result that land use in Britain has greatly suffered."

The course had managed to combine theoretical and practical aspects both

in scientific and economic aspects, he said. A House of Lords Select Committee Report had commented on the benefits to the country of teaching the two subjects together. About 40 students a year used to enter the course.

Professor Poore will now take up a senior fellowship at the International Institute for Environment and Development in London. He said whatever the merits of the new applied biology degree, it did not interest him.

He is also worried about the future of the Commonwealth Institute of Forestry, based at Oxford for more than 100 years. It has been seriously affected by Government restrictions on postgraduate students, and will suffer further with the end of the undergraduate degree. Forestry was first taught at Oxford in 1908.

In line with university policy, the chair in forest science will be "frozen" once it is vacated by Professor Poore. There are no plans to abolish it, but it will probably be some time before it is filled.

Ngaio Crequer and David Jobbins report from the Association of University Teachers council meeting

Lecturers reject private funding

University lecturers this week overwhelmingly rejected the principle of private funding behind the recent discussions between Sir Keith Joseph, Secretary of State for Education, and the vice chancellors of Aston, Durham, Leicester, Reading, Salford and Strathclyde.

An emergency at the AUT council meeting at Imperial College, London, proposed by Glasgow, called on the Committee of Vice Chancellors and Principals to declare its opposition to any proposals to destroy the principle of public funding for universities.

Dr Anita Pallinder (Glasgow) said the six vice chancellors would have been discussing these new proposals at the moment but for the election. They were the "ugly brainchild" of Dr Graham Hills, the principal of Strathclyde. "He calls this freedom but I would call it a bondage form of freedom which puts universities at the mercy of fluctuations in research as perceived by the university, and fluctuations in the industrial base itself," she claimed.

The Strathclyde delegates disassociated themselves from their vice chancellor. They said the question had not been discussed at the university and that the motion should be strengthened so

that Dr Hills "and his buddies" should be forced to reply.

As Ann Spooner (Aston) said the philosophy of private universities was being put into practice at Aston. "At the first meeting we had with our vice chancellor he said it was wrong to have fully tenured staff," she said. "He has now said to a dean he wishes to follow the Stanford ideal where the principal and his or her immediate subordinate choose the up and coming subjects and hire the best people. Some of the subjects will go out of fashion and they will sack the people."

She added that the vice chancellor, Professor Frederick Crawford, was already putting this into practice with the academic plan, which required a staff of 345. But Professor Crawford was going in for "overkill" with new demands for early retirement. Ms Spooner said one department was told it would have to change. It objected and was told it would be closed if it did not.

The council condemned the decision to grant a charter to the University College at Buckingham as "blatantly political". Delegates agreed it was aimed at preparing the way for privatization along the lines of the "Think Tank".

Battle urged over 'vandalism'

General secretary Diana Warwick, said in her first address to a council that the union had to fight against the mentality of Sir Keith Joseph, who saw higher education as a drain on the economy.

His vision was of a few centres of excellence, with separate establishments for teaching and research, and a few liberal arts colleges thrown in at the bottom to placate the Tory wets, she said. The union must fight for a full and decent education from nursery to university.

She said there was currently an air of "exhausted relief" but this was dangerous. The pressure for cuts had led to pressure on tenure.

"What has been the real cost to the universities of these cuts, thoughtlessly applied, arbitrarily allocated, and senselessly pursued? What will be the cost to the country? This distorted approach to scholarship, this Victorian emphasis on self-help, this new caste system of utilitarian learning will seriously impair any possibility of Britain responding positively and imaginatively to economic, social and technological change. Calmer voices than mine have called for intellectual vandalism."

She said the Department of Education and Science had sanctioned the cuts in students and staff over the last two years based on bogus predictions about student numbers. In 1980 the Government had rejected any increases in numbers of mature students, women students, they had ignored the impact of unemployment and saw no need for expansion for disadvantaged groups.

Latest DES figures showed a higher participation rate than forecast, and that expansion would go on for longer. But the Conservatives still did not anticipate that there would be yet more pressure on the universities from this newly identified demand, new recruits to the middle class arising from the expansion in white collar employment.

She also warned of signs of further cuts.

Dr J. M. Hooper (Birmingham) said that more than 3,500 Turkish academics had been sacked or forced to resign. A former member of Birmingham University had been sentenced to eight years in prison for publishing a book which dispensed the regime.

Britons urged not to accept academic jobs in Turkey

British academics have been asked by their union not to accept jobs in Turkey until limits on academic freedom there have been lifted. The council noted "with concern" that the British Council had been helping the Turkish Government to recruit staff and called for an end to repression of academics and

students. Dr J. M. Hooper (Birmingham) said that more than 3,500 Turkish academics had been sacked or forced to resign. A former member of Birmingham University had been sentenced to eight years in prison for publishing a book which dispensed the regime.

Pensions inequality sparks row

There was a heated debate on discriminatory pension rules with many members objecting to an executive proposal to hold a ballot on whether the rules should be changed.

The ballot was on whether employees' contributions should temporarily be raised to support equal pensions for widowers and widows until the law is changed to require similar treatment.

Mr Ron Emmanuel, for the executive, said the debate was not about AUT policy on widows' pensions, but about the best strategy. He said there were three choices: to find out whether European law required equality and if not, to change it; to get universities to

introduce pensions to be paid all, or in part by the employer; or as a temporary expedient, to get members themselves to pay for widowers' pensions.

He said the best immediate strategy was the third, although in the long term it was necessary to change the law. However, this might take five to ten years, whereas a ballot would take about 18 months.

But Victor Fisher, Leicester, said the executive was wrong in principle and tactics. The pension should be paid for by both employer and employee and this was a winnable situation. She said women only formed 15 per cent of the membership of the Universities Superannuation Scheme and was reluctant that they should fail only because of a "reactionary and anti-women membership".

France Grundy, of Keele, against the motion, said: "I find it repugnant that my trade union is going to ask me to vote on equal rights. It will give people an opportunity to renege on their moral responsibility."

Mr Emmanuel, in reply, said the AUT was definitely going for a "spouse's pension", and they were not talking about justice or morality but a pragmatic chance of success. "We do not have a hope in hell of making the other side agree to these payments without a ballot." The motion was carried.

Disaffiliation vote over South Africa

Council voted overwhelmingly to disaffiliate formally from the only international organization for university academics because of the continued membership of the University Teachers' Association of South Africa.

It was the second attempt by the AUT to sever links with the International Association of University Professors and Lecturers, of which it was a founder member.

The vote was carried easily despite a rearguard action by Mr Philip Liddell, a member of the executive, who argued that IAUPL had not been adequately supported by the AUT, which is now to explore alternative international organizations.

Unsticking the Warwick mud

Warwick University's Industrial Relations Research Unit had been completely cleared by the Berrill inquiry. Lord Belfort had accused the unit of trade union bias, but the inquiry had vindicated the unit and had commended the quality and quantity of its output.

But Mike Terry, of Warwick, said: "Despite the total clearing of our name, a little mud always sticks. I want to give you the clearest possible statement that we have been found not guilty of any of the accusations."

Salary agreed

Delegates ratified the 1983 salary agreement which gives 4.6 per cent across the board with more for the lower paid.

Council was warned of allegations that a Cultural attaché from the Iraqi embassy was approaching registrars for the names of Iraqi academics and students in Britain. They urged university authorities to check the bona fides of Iraqi students with great care.

Terms laid down for central voluntary redundancy scheme

University academics have laid down their terms for a long-term voluntary severance scheme which the Government would fund centrally.

The AUT council agreed to carry on with similar arrangements to those used to shed jobs in the universities over the past two years. But it made clear that their operation should be genuinely voluntary and that better compensation should be available for lecturers under 55.

Dr Andrew Taylor, chairman of the union's salaries committee, said: "But at the end of the day the academic imbalance in the universities, the fact some of our members are having to work too damned hard, voluntary severance is not a solution. It is only something which will help a little bit. The real solution is to restore the cuts."

The council confirmed the union's initial hostile reaction to the distribution of the "new blood" posts. It agreed to protest strongly to the University Grants Committee over the balance between institutions and subject areas. Dr Julian Kinderle (Sheffield) said the executive's comment "This is a further proof of the attack by the Government on the way universities are run."

Professor Bill Wallace (executive) commented: "New Blood" represents about 5 per cent of the posts lost through early retirement and it is just insufficient... the distribution of the posts is further skewing the system."

Two thirds of "new blood" posts had gone to science, engineering and medicine, with the arts and social sciences a poor last. "It is simply playing further into the hands of the game the Government has started and which was implemented through the UGC in 1981," he added.

Ms Penny Mullen (Birmingham), who was later elected to the executive, said: "The 'new blood' scheme is an extremely clever attack on the autonomy of the universities."

The council attacked suggestions that universities that failed to accept redundancy as a reason for dismissal of

academics might risk exclusion from the scheme after this year. Some members alleged the use of short term contracts was on the increase and it was rejected as a device to circumvent tenure.

Dr Ron Emmanuel (executive) warned a new type of temporary contracts was being introduced with staff being engaged for five or ten year periods without any reason for not granting tenure. Out of 44 institutions, five were found to be doing this, but he was not prepared to identify them. "This is a direct attack on tenure," he added.

A delegate from one of the five, Mr Ian MacFarlane, from Stirling University, said they were this week considering whether to take industrial action because of the refusal of the authorities to negotiate on the issue. The university had refused to go to the Advisory, Conciliation and Arbitration Service on the issue, he added.

The University Grants Committee was attacked for failing to fulfil its function as a buffer between universities and the Government.

The council repeated its demand to replace the UGC with a "representative and responsible" universities council. But it stopped short of expressing dismay and concern at the appointment of Sir Peter Swinnerton-Dyer as its next chairman.

Dr Bob Unwin criticized the "sub-born" refusal of Sir Edward Parkes, the current chairman of the UGC, to publish the criteria for the July 1981 list. "It is hardly just or moral to condemn academics to possible redundancy simply on the say-so of a secret, unrepresentative and unaccountable cabal. We should once again ask the current holder of the office to act in accordance with the terms of professionalism. We should say: 'Don't publish - and be damned'."

Dr John Chartres (Leeds) condemned the UGC as a "bad advisory body doing a worse administrative role than a kind of mule which is educationally sterile."

Lecturers teach 'too little' with books

by Paul Flather

Further education teachers are accused of seriously underrating the importance of books and relying too heavily on college hand-outs, in a report produced for the Publishers' Association.

The report says that despite the industriousness of lecturers and the enterprise of publishers which have kept the further education sector reasonably well supplied, present practices "leave too much to chance".

The report was written by a working party drawn from 10 leading publishing houses from the University College and Professional Publishers Council and the Educational Publishers Council, to explain to publishers "the great

tide of change" sweeping further education.

"Can the enormous duplication of effort and the equally enormous effort of duplication that the present system entails really be justified, and can it go on indefinitely?" it asks.

It states that those concerned with the direction and day-to-day running of further education seem to have shown too little interest in the question of whether or not students can actually buy or otherwise obtain, books and other learning materials needed for their courses.

The report also discusses "the considerable diversity of practice not to say confusion" surrounding the question of who pays for students' course books in local authorities as well as colleges.

Mr Kenneth Pinnock, educational director of John Murray (Publishers) Ltd and chairman of the working party, said there was a quite unhealthy reliance on duplicated material, which was sometimes of excellent but sometimes of poor standard.

He said the working party contained many publishers deeply involved in further education. It had also discussed the issues with a wide range of representatives in the sector, including the technical bodies.

The report reviews the great changes in further education, including the growth of vocational education, the shift towards tertiary colleges, the arrival of new technology and the Open Tech, and changes in distance learning.

Cambridge in computer centre bid

by Jon Turney

Science Correspondent

Cambridge University plans to become a partner in an industrial consortium which is bidding to take over the Department of Industry's Computer-Aided-Design Centre.

The CADCentre, which is in Cambridge, has been for sale for a year as part of the DoI's policy of privatizing its research establishments. But although it is one of Britain's leading producers of computer programs for controlling industrial design and production the department has had trouble finding a buyer.

The stumbling block has been the centre's financial record - with a £2m deficit last year and projection of a £1.5m loss this year. Firms have been reluctant to invest in expensive new computer systems in the recession, in spite of handsome Government subsidies, and the CADCentre's work has generated more public interest than revenue.

However, the DoI is now poised to accept a £1m bid for the centre from an industrial consortium including the computer company ICL, a computer bureau and an engineering firm. Cambridge University has now agreed to join this group, putting up 15 per cent of the capital, with ICL taking the largest share at 40 per cent.

The university's share will come from two colleges, Trinity and St John's, both of which have a history of investment in high-technology ventures. Trinity, in particular, has close links with the Cambridge science park, one of the first in the country.

The colleges want to see the CADCentre continue and decided to seek entry into the consortium when it was clear that industrial backing would be available. They hope it will lead to academic links between the university and a centre of expertise in new technology, as well as returning a profit.

Final purchase details should be agreed by the end of this month. However, the DoI accepts conditions for sale of existing programs. The buyers hope the centre can show a profit in two or three years' time.

The report also experience another. The team believes that during the nine months training it will be necessary for each trainee to learn at least three different jobs belonging to the same grouping.

My Hayes believes it is vital to realize that skills should be vested in the trainee, so that he/she is able to deploy and redeploy these in unfamiliar circumstances and becomes "the carrier of industrial flexibility".

But to ensure that young people can cope with unemployment the team has identified a set of competencies which training must provide. These are personal survival, exercising citizenship (for example knowing how to claim benefits) how to set up a business, ability to participate in leisure activities and learning how to participate in further education.

The 11 groups cover administrative, clerical and office services; agriculture, horticulture, forestry and fisheries, craft and design; installation, maintenance and repair; technical and scientific; manufacturing and assembly; processing; food preparation and service; personal service and sales; community and health services and transport services.

Each trainee will be expected to become competent in one of those groups but should also experience another. The team believes that during the nine months training it will be necessary for each trainee to learn at least three different jobs belonging to the same grouping.

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Whether the recommendations are adopted as the basis for next year's YTS will depend essentially on the reaction of the programme's managing agents during 1983/84. Their views on the YTS report as well as on other proposals for core activities, currently being considered by the MSC, are to be sought during that period.

Get down to basics, says unit

Every local education authority should have a development plan for adult basic education, which should be provided free to students of all ages, the new Adult Literacy and Basic Skills Unit conference heard.

Mr Alan Wells, director of ALBSU, said: "It cannot be right that the level of resources including staff differ so widely from area to area. Where one local authority has one or two full-time staff coordinating provision across the authority, others of similar size and population have perhaps three or four hours per week for essentially the same tasks. Can both be examples of good practice?"

Gond practice was the subject of the conference and the accompanying discussion document *Organizing Provision: Good Practice in Adult Literacy and Basic Skills*. The document says that as a young service, basic education must be conscious of how it is to develop.

It must have a student-centred approach, and students must be consulted on the curriculum, their aims, and their progress monitored. Classes should be available throughout the year and in a building which has been publicly known as a centre for basic education.

The document was drawn up by an ALBSU advisory group mainly comprising local authority basic education workers and organizers. It recommends minimum ratios of one full-time organizer for every 70-90,000 adults, and class ratios of one tutor for every six to eight students.

No students should have to pay, not because of any organizational costs but on principle, said Mr Wells. "We felt that basic education was such a basic right in our society that it should be available free of charge."

But teaching basic education should not receive basic pay or working in basic accommodation, he added. Hurdham scale payments for basic education staff did not reflect the skills they had and needed.

Organizing Provision: Good Practice in Adult Literacy and Basic Skills, free from the Adult Literacy and Basic Skills Unit, Kingsbourne House, 229/231 High Holborn, London WC1V 7DA.



HMIs give Plymouth thumbs up

A team of Her Majesty's Inspectors have confirmed the high quality of specialist courses at Plymouth Polytechnic following an investigation into environmental science education.

The inspectors visited the polytechnic in 1982 for the first of a series of visits as part of an inquiry into the state of environmental science as a course subject in higher education and into the way it was being taught at institutions.

They looked not only at the BSc in environmental science degree but also at a wide range of other disciplines with which it is linked, such as civil engineering and architecture. Dr Kenneth Angus, acting head of the department, said the inspectors' report was very complimentary.

"There was a sense in which we did feel that we were being put under the spotlight by the visit although it is recognized that we run prominent courses in this field. But as it turned out, the inspectors were very supportive. They interpreted environmental science in a very wide sense which took them outside the specific department," he said.

The quality of the work done and the development of appropriate resources on campus were highlighted, with particular reference to the waterborne resources of the polytechnic. The student academic and social life was considered by the inspectors to be strong.

The inspectors praised the priority given to staff to concentrate on course development and evaluation.

The polytechnic's research work was seen to represent a significant contribution to the growing body of knowledge of applied environmental sciences.

The University Grants Committee was attacked for failing to fulfil its function as a buffer between universities and the Government.

The council repeated its demand to replace the UGC with a "representative and responsible" universities council. But it stopped short of expressing dismay and concern at the appointment of Sir Peter Swinnerton-Dyer as its next chairman.

Dr Bob Unwin criticized the "sub-born" refusal of Sir Edward Parkes, the current chairman of the UGC, to publish the criteria for the July 1981 list. "It is hardly just or moral to condemn academics to possible redundancy simply on the say-so of a secret, unrepresentative and unaccountable cabal. We should once again ask the current holder of the office to act in accordance with the terms of professionalism. We should say: 'Don't publish - and be damned'."

Dr John Chartres (Leeds) condemned the UGC as a "bad advisory body doing a worse administrative role than a kind of mule which is educationally sterile."

Astronomers put faith in the stars

European astronomers held their breath yesterday in anticipation of the launch of the X-ray satellite Exosat. The European Space Agency's latest scientific observatory, first proposed in 1970, should put European X-ray astronomers in the forefront for the rest of the 1980s.

Ironically, one reason the Exosat mission took so long to get under way was the agency's wish that the satellite should be launched on the European-built rocket Ariane. But the last launch of Ariane in September left two satellites lost in the ocean after a system failure. Scientists then pressed the ESA to ask the American National Aeronautics and Space Agency to look after Exosat to avoid further delays.

The ESA's council finally agreed to do this in February and the launch on an American rocket was set for this week from the Vandenberg air force base in California.

Exosat is the second major scientific satellite launch of the year, following the joint British-American-Dutch infrared astronomical satellite which has been in orbit since January. The interest in the new satellite can be gauged from the file of over 500 proposals for observations made in the first six months of Exosat's working life.

This is many more observations than the instruments can handle so soon, but it should operate for at least three years if it attains its planned orbit.

The craft carries three sets of detectors, one of them designed by a team including astronomers at Leicester University. Between them they will cover X-ray sources of differing intensities.

The information they send back will help boost a field of observations which only goes back to 1962, when the first X-ray signals from outside the solar system were recorded.

Universities have 'double' vision

The universities' view of themselves has fluctuated wildly between being an intellectual liberator and an authoritarian dictator of established wisdom, according to Professor Lawrence Stone of Princeton University.

Professor Stone was speaking at a conference celebrating Edinburgh University's 400th anniversary on *The University in society, past, present and future*. He added that historically universities had rarely seen themselves as setting out to encourage a spirit of free inquiry.

In his paper, *Social control and intellectual excellence: Oxbridge and Edinburgh, 1560 to 1983*, Professor Stone said learning had not always been the prime aim of university education. He agreed with the seventeenth century educationist John Locke who defined education's first priorities as the inculcation of virtue, wisdom and good manners.

"These educational ideals are a far cry from the virtual abandonment of Oxbridge today of attempts to inculcate virtue, wisdom or good manners, and the intensive concentration on a single narrowly specialized field."

YTS should train for the dole, says report

by Patricia Santinelli

Youth Training Scheme participants should be educated for unemployment as well as for jobs, the Sussex University-based Institute of Manpower Studies advocates in a new report.

The report *Training for Skill Ownership: Learning to Take it With You* which was produced by an IMS team headed by Mr Christopher Hayes is to be published, probably next month, by the Manpower Services Commission which ordered the work.

The proposals are centered on 11 occupational training groups each with a main purpose and designed to ensure that young people can take their skills and use them in and out of employment.

The 11 groups cover administrative, clerical and office services; agriculture, horticulture, forestry and fisheries, craft and design; installation, maintenance and repair; technical and scientific; manufacturing and assembly; processing; food preparation and service; personal service and sales; community and health services and transport services.

Each trainee will be expected to become competent in one of those groups but should also experience another. The team believes that during the nine months training it will be necessary for each trainee to learn at least three different jobs belonging to the same grouping.

My Hayes believes it is vital to realize that skills should be vested in the trainee, so that he/she is able to deploy and redeploy these in unfamiliar circumstances and becomes "the carrier of industrial flexibility".

But to ensure that young people can cope with unemployment the team has identified a set of competencies which training must provide. These are personal survival, exercising citizenship (for example knowing how to claim benefits) how to set up a business, ability to participate in leisure activities and learning how to participate in further education.

Whether the recommendations are adopted as the basis for next year's YTS will depend essentially on the reaction of the programme's managing agents during 1983/84. Their views on the YTS report as well as on other proposals for core activities, currently being considered by the MSC, are to be sought during that period.

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Overseas news

Australian call for early retirement

from Geoff Maslen

MELBOURNE Australian vice chancellors have called for an early retirement scheme to improve employment prospects for young academics and even out the age bulge in higher education staffing.

In a submission to the Universities Council, the body which makes recommendations to the Tertiary Education Commission, the vice chancellors call for a grants scheme to encourage academics to retire early at a cost of \$12m a year over the next three years.

They say that if a scheme similar to that operating in Britain was adopted, an average payment of \$80,000 would be made to each academic on retirement, with adjustments to allow for length of service, number of years to retiring age and present salary scale.

The vice chancellors say: "The retirement during the 1985-87 triennium of one third of those aged 55 and over would result in a payment to about 150 staff each year, and the total cost over the triennium would be in the order of \$53m."

They argue that universities are facing a serious problem over staffing age profiles. Because of the large number of younger staff - only 25 per cent are over the age of 50 - the very low retirement rates and minimal numbers of extra posts being created, opportunities for younger scholars to obtain academic posts are extremely limited.

Unless action is taken to create more employment opportunities in higher education, a generation of highly qualified scholars could move away from research or could be lost to Australian universities, the submission says.

The vice chancellors also call for a system of postdoctoral fellowships to be established to provide a "holding reservoir" to help young people of exceptional merit and promise wishing to pursue an academic career but unable to obtain a position in the short term.

The eventual cost of such scheme allowing for the progressive introduction of 50 new awards a year, tenable up to a maximum of five years and worth

\$25,000 a year is put at \$56.25m.

As well as these proposals, the submission points out that the government's intention to provide 8,000 new student places over the triennium would create 500 to 600 new teaching posts. The vice chancellors assume that funding for these extra appointments would come from money already injected to support the additional students.

Their submission paints a gloomy picture of the decline in higher education over the last few years. Between 1979 and 1982, for instance, the numbers of teaching and research staff decreased by some 350, or 3 per cent, while the student load increased, leading to a gradual worsening of student-staff ratios from 11.7 in 1979 to 12.4 in 1982.

There was a substantial decline in the number of tutorial staff. Between 1977 and 1982, the number of full time equivalent tutorial staff in state universities fell from 2,217 to 1,824, a decline of 18 per cent.

In discussing government proposals to increase the participation of young people in higher education, the vice chancellors argue that this should not occur at the expense of mature age students who now constitute a significant proportion of enrolments in universities and colleges of advanced education. Additional places must be provided within the university system and these might best be made available mainly in the smaller and newer universities and in the humanities, the natural and social sciences, and the sophisticated technologies such as computing and engineering.

The vice chancellors say that financial stringencies have considerably reduced the universities' capacity to support a broad general programme of basic research activities and to help young researchers beginning a career in research. They call for increases in special research grants of \$8m in 1985, \$10m in 1986, and \$12m in 1987 and additional funds to help them buy and use large items of equipment.

The eventual cost of such scheme allowing for the progressive introduction of 50 new awards a year, tenable up to a maximum of five years and worth

New biotech institute

from Mark Gerson

MONTREAL The Canadian government will build a \$61m biotechnology research institute in Montreal. The institute, to be operated by the National Research Council, will concentrate its research on animal diagnostic chemicals and vaccines, bacterial oral teaching, pest control, and genetic engineering.

The laboratory is expected to open by late 1985 and employ 60 scientists and 120 technicians. University and industry researchers will also have access to its facilities.

Canada recently decided not to bid for the new United Nations biotechnology centre, but the government still considers biotechnology "crucial to Canada's ability to compete internationally," according to David Johnston, minister of state for economic development and science and technology.

The National Biotechnology Research Institute is part of a \$290m economic development programme that has set up 15 research centres in various deals across the country. Among the centres announced to date are a \$10.5m robotics centre north of Montreal and an institute for manufacturing and technology in Winnipeg.

Student loan plan for prisoners

A system of student loans may be introduced to help prisoners in Canada who want to follow university-level courses. Inmates will no longer be entitled to free tuition next year when federal funds for the university offerings are withdrawn in a cost cutting move.

University and prison officials have expressed concern at the prospects of a debt load that would discourage inmates who might benefit from the programme. They point to a 1980 study of prison students that showed that only 14 per cent of the men who took courses were at least eight months lapsed back into crime. The national recidivism rate in 51 per cent.

There were 232 inmates who took advantage of the programme this year at an average cost to the government of \$3,500 per prisoner. The courses are offered at nine federal penitentiaries and four Canadian universities.

Islamic apathy towards technology deplored

from Hasan Akhtar

ISLAMABAD Pakistan's Nobel prizewinner and outstanding physicist, Dr Abdus Salam, has deplored the apathy of the Islamic states towards promoting science and technology, which is essential for development.

Dr Salam spends most part of his time outside Pakistan, and many Muslims do not regard him a "true believer" because of his Ahmed beliefs. But he was in the country recently to speak at the ministerial standing committee of the organization of Islamic Conference on Science and Technology.

Dr Salam pointed out that the unanimous decision of the Islamic summit held in Lahore in 1974 and reaffirmed by the Taif Islamic summit in 1981, to establish a \$1 billion fund for a proposed Islamic science foundation, remained unfulfilled. This was because of the lack of interest shown by most of the wealthy Islamic states.

He said that compared to the proposed \$1 billion, only \$16m had been collected for the Islamic Science Foundation. About \$15m came from Saudi Arabia and \$1m from Pakistan.

General Zia, Pakistan's president has also expressed dismay over the

Showpiece university closes

from A. S. Abraham

BOMBAY For the third time in less than three years, Jawaharlal Nehru University in New Delhi, India's academic showpiece, has been closed down indefinitely.

This time the closure is the climax to one of the worst outbreaks of campus violence the country has ever seen.

As usual, a trivial incident sparked it all off. A student, charged with insulting his hostel warden's wife, was given 30 days to move to another hostel. As soon as he had moved out, three leaders of the university students' union broke open the lock of his old room and reinstalled him in it.

When they were expelled for having done this, the union besieged the vice chancellor, the rector and the acting registrar in the vice chancellor's residence for two days and abused and humiliated them.

The police were called in to rescue them. The police said the students had gone beyond the bounds of legitimate protest and were illegally confining them. Doctors found the three officials had very high blood pressure and were dehydrated as a result of their ordeal.

FBI to stamp out mail-order diplomas

The Federal Bureau of Investigation, the chief law enforcement agency within the American justice ministry, intends to shut down 38 "diploma mills" where thousands of individuals have acquired spurious academic credentials.

The colleges advertise that they offer "non-traditional" degrees but the FBI says it will seek charges under federal mail and wire fraud statutes against them. An agent with the bureau's office in Charlotte, North Carolina, said that the records from 29 mail-order colleges had been seized already as a result of a two-year undercover investigation. Several more indictments are likely before the case is concluded.

The diplomas, which carry a full academic transcript, have sold for about \$1,000 each. According to the FBI they are available in virtually every academic discipline including medicine and law.

Among those purchasing the fictitious credentials are teachers and government officials. Most often the degrees, which do not require taking a single course, are used to obtain a pay rise.

Individuals who have purchased the fraudulent documents will not be prosecuted, but the FBI will notify school districts and state licensing boards which may take matters into their own hands.

Also under investigation is a phoney accreditation agency which confirmed the validity of fake degrees when supplying employers or government officials inquired after them. The diploma mills generally consist of mailboxes. Charges carry penalties of up to five years in prison and a \$1,000 fine for each violation.

Muslim world's lack of interest in acquiring modern education

Pakistan's own record is poor and the literacy rate is about 23 per cent. Even fewer people go on to higher education.

Opening a three-day ministerial meeting in Islamabad, General Zia recalled the spectacular strides taken in scientific and technological advancement by South Korea.

The Islamic ministers committee adopted a declaration expressing hope that the Islamic world would catch up with the advanced nations by the end of the century.



Student demonstrations are a common event in India

After the police had left the campus, the students went on the rampage. The homes of teachers and professors were attacked and stoned because the teachers' association had backed the administration. Teachers were beaten up and their wives and children abused, terrorized and forced to flee their homes. The police were called in again and have stayed. Some 350 men and women have been arrested.

Technology leaks prompt US clampdown on exist visas

from E. Patrick McQuaid

WASHINGTON The United States is to attempt to curb the exit of hundreds of millions of dollars worth of technical data by denying exit visas to "suspicious visitors."

The state department said the policy was aimed at controlling leaks of sensitive military technology, which were lost mainly through commercial rather than academic ventures. It was unlikely, said an official, that many students or visiting professors would be adversely affected.

Some visiting scientists from the Soviet Union and the People's Republic of China would be issued restricted visas, said the state department. Universities hosting these visitors might be required to monitor their activities and report on any violations of their travel documents. Already administrators at a variety of research universities have complained that such a policy would compromise their tradition of academic freedom.

Observers say the nature of academic exchange with the Soviets and Eastern bloc countries will probably not change as a result of the policy. Scholarly exchanges with China and some western European nations could be jeopardized, however.

Independent of the government action, a mathematician at Stanford University who emigrated from the Soviet Union in 1977, has caused a minor stir by charging that the bulk of Soviet academics visiting the US are nothing more than KGB-approved ideologists, or worse, spies whose single mission is to steal American know-how.

Soviet studies cash drive urged

The American ambassador to the Soviet Union, Mr Arthur Hartman, has predicted that legislation before congress to establish a \$30m endowment to support Russian study centres would not be enacted and urged private research institutes to expand their fund-raising activities.

The ambassador made his remarks during a reception marking the thirty fifth anniversary of the founding of the first such study centre. Harvard University's Russian Research Centre, has served as a model for other regional study institutes both at Harvard and elsewhere. Administrators at Harvard used the anniversary as an occasion to launch a \$3m capital drive to strengthen the institutes programmes.

Mr Marshall Goldman, deputy director of the centre, stressed the need, as did Mr Hartman, for university-sponsored scholarship because it

Following the university's closure, students staying in hostels have been asked to leave. But the students' union says its members will not go and will resist eviction peacefully.

Reagan increases cash for black colleges

from E. Patrick McQuaid

WASHINGTON America's historically all-black colleges and universities received significant increases in federal support during 1982, according to Mr Terrell Bell, the secretary for education. He said increases totalling \$19.6m, which represent a 3.6 per cent hike over the previous year's allocations, are a result of President Reagan's executive order that his department boost support for these institutions.

The nation's 102 "historically black" institutions received a record \$364.5m in federal aid, the bulk of which came directly from the department of education.

Elsewhere, however, the administration's record on civil rights is under sharp attack. The National Association for the Advancement of Coloured People, the largest minority advocacy group in the country, has asked congress to dramatically cut the budget of the justice department's civil rights agency.

The NAACP said the agency had ignored its legal responsibilities, calling it a "department of injustice" in the way it handled race discrimination investigations. The NAACP called for the redistribution of the agency's civil rights enforcement duties among other federal agencies, including the department of education's own civil rights division.

A judiciary committee reporting to the House of Representatives rejected those proposals, however, and voted to endorse full authorization of the \$21.2m Mr Reagan has proposed that agency receive. Debate is not over.

Ironically, both the American and Chinese governments recently announced the signing of four more scientific exchange programmes, bringing the total between them to 21.

The Chinese prime minister, Mr Zhao Ziyang, said he hoped the technological cooperation would remove "the existing obstacles" between the two nations, a reference to his government's decision to cancel most cultural and sports exchanges with the Americans because of the US government's decision to grant political asylum to a defecting tennis player.

Money raised through the fund drive, explained Mr Goldman, would be used to endow senior fellowship programmes and create an opportunity for journalists, government, and private-sector specialists to study at Harvard for a year.

Another programme would select a variety of junior professors, specialists in sociology or political sciences, and retrain them as experts in related Soviet studies. They would become "instant Soviet experts" he said.

Guideline debate under way

from Guy Neave

PARIS

New protests greeted this week's introduction of the Higher Education Guideline law in the National Assembly just as the militant students appeared to be running out of steam.

The number of demonstrations and participants had fallen dramatically. And the nature of the demonstrators had changed too. Rarely had France seen such well-dressed protesters. The number of blazers, silk scarves and tweed-skirts - very unusual in French universities - was amazingly high.

The medical students decided to end their three month strike at a meeting in Rouen of delegates from 44 university medical centres with a vote of 11,132 to 6,613.

This gave the government time before the assembly debate to prepare an amendment to the controversial December 1982 law which triggered the strike. The assembly had voted through the introduction of a selective examination at the end of the sixth year of studies to determine their right to training to become specialists.

There is also growing distaste for the part played by party political student unions - partly those on the right in leading student demonstrations. In the early days, the Comité des Etudiants Libéraux de France, close to the young Giscardians and the anti Marxist Union Nationale Interuniversitaire made the running. This is now coming under fire.

The feeling is growing among certain sections of the student world that some

distance must be placed between student protest and political opportunism of the right.

Some student leaders are seeking to organize a movement independent of both official left-wing student unions and the right-wing fringe groups. They hope to launch a new movement through the introduction of the Higher Education Guideline Bill. Whether they succeed, is doubtful. The end of the academic year, the prospect of the long vacation and despite threats from some elements among the professorate, examinations - all are powerful demobilizers.

Last week's recommitments - a constant feature of French student politics - could well be the calm before the awaited uproar as the parliamentary debate begins.

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Row erupts again over Slavonic atlas

Yugoslavia's highest academic body - the Council of the Yugoslav Academies of Sciences and Arts - has sent a protest letter to the Soviet Union threatening to withdraw all Yugoslav material from the proposed General Slavonic Linguistic Atlas being prepared under the auspices of Unesco.

Such a withdrawal, would, of course, make nonsense of the project, which aims at showing the distribution of the various Slavonic languages in the whole of the Slav-speaking area. The atlas, first proposed in 1959, is

however, as the issue must still go before the full house and the Senate.

The head of the justice department's civil rights agency, Mr William Reynolds, the assistant US Attorney General, has himself been the focus of controversy. At Amherst College last month he gave a speech in which he said the use of racial quotas was morally unjust and has led to the "creation of a kind of racial spoils system in America, fostering competition not only among individual members of contending groups, but among the groups themselves."

Representatives from a variety of minority advocacy groups contend, however, that Mr Reynolds' remarks were intended to pit them against each other in a scheme to "divide and conquer."

The fate of continued funding for junior colleges operated by American Indian tribes must wait for consideration by the full house because Mr Reagan opposes the legislation. Earlier approved by the house education and labour committee, the bill would provide \$5m to help the tribes build college endowments and start new construction projects. To speed up investigations, the bill was brought to the house under special procedures requiring a two-thirds approval in order to pass. But the measure didn't gain enough support after Mr John Enlenborn, a republican from Illinois, informed the house that Mr Reagan was opposed to it. Now it must wait for consideration under usual procedures when its chances of passing are better because it would only require a majority vote.

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being edited by a multi-national team, representing the Soviet Union, Czechoslovakia, Poland, Yugoslavia and Bulgaria, and also those of neighbouring countries with a sizable Slavonic-speaking minority - Austria, Italy, Hungary and Romania. The secretary of the project is, however, situated in the Soviet Union.

This position has been used, the Yugoslavs say, to enroach on the linguistic independence of Macedonia. The

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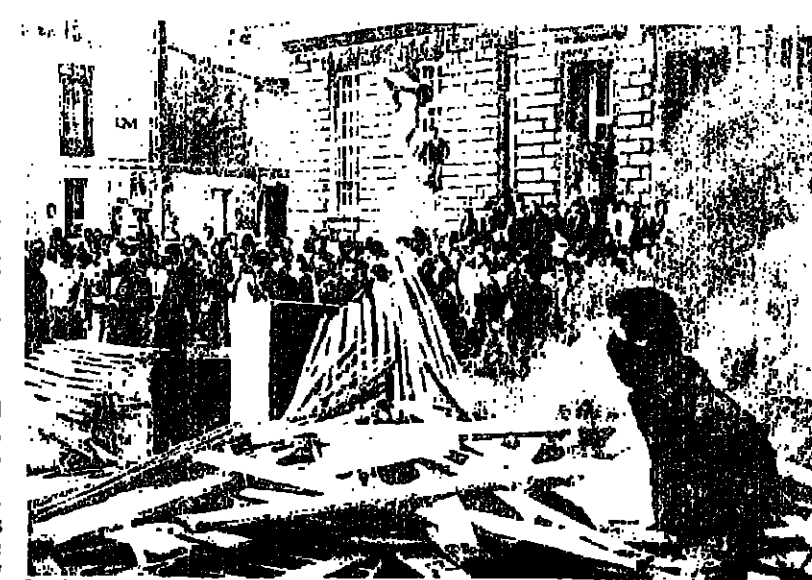
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Overseas News



Students in Bordeaux demonstrate against government policy.

New Zealand lecturers fight for right to negotiate

from Lindsay Wright

WELLINGTON Agreements with each university council are to be sought by the Association of University Teachers in an effort to obtain formal recognition, and the right to negotiate conditions of employment.

Founded 60 years ago, the AUT flourished into hibernation after its first six years, re-emerged in 1946 and maintained steady low-key activity until it became an incorporated society in 1967.

It has been frustrated, however, by the fact that it has never achieved any legal right to negotiate on behalf of its members. Only in the determination of salary scales has the association had any recognition and then only with the right to present submissions and to be "consulted".

Local AUT branches have from time to time, and at the discretion of their own university councils, been brought

in to discussions on specific issues, but the AUT wants to be included in discussions on all occasions when changes to conditions of employment are under discussion.

Executive secretary Rob Crozier said: "Industrial legislation in New Zealand relates to persons who are employed in either the private sector or the state sector. Academic staff do not fall within the scope of either of these acts and this is the cause of some problems".

The association has, in the past, rejected the possibility of seeking registration as an industrial union under private sector legislation.

But now that both library and administrative staff in New Zealand universities have been brought under the legislation that covers the state sector, there is a simmering threat that academic staff may also be gathered in for the purposes of determining their conditions within five years.

INDUSTRY AND HIGHER EDUCATION: FUTURE COLLABORATION

A one-day conference organized by the Institute of Manpower Studies in association with the *Times Higher Education Supplement* will be held on Thursday, 7 July 1983, at the London Business School.

Among the speakers will be Mr Kenneth Durham, chairman of Unilever, Lord Flowers, rector of Imperial College, Professor John Ashworth, vice chancellor of Salford University, Professor Laing Barden, director of Newcastle upon Tyne Polytechnic, Mr Hugh Wassell, formerly engineering director of GEC-Marconi, and Mr Brian Oakley, secretary of the Science and Engineering Research Council.

The conference will start at 9.45 am and end at 4.30 pm. The fee will be £65.

APPLICATION FORM

I should like to book the following Conference place(s) at £65 per delegate.

Name (block letters) Dr/Mr/Mrs/Ms/Miss

Present Position

Organisation

Address

..... Tel No

A cheque for £ is enclosed, made out to 'The Institute of Manpower Studies'.

OR

Please send invoice to

The completed application form should be returned as soon as possible to:

Kaye T. Smith, Education and Training, Institute of Manpower Studies, Mantell Building, University of Sussex, Falmer, Brighton BN1 9RF (0273 686751).

Felicity Jones continues the series on colleges and polytechnics with a visit to NELP

The secret to riding the tide of the National Advisory Body investigation may well turn out to reside with those institutions which have managed, in some respects, to turn the tables on this largely negative planning exercise. Those which have looked optimistically to the future and defended their right to pursue academic policies relevant to the local community rather than take a "cut and run" attitude may live to win the day.

North East London Polytechnic has the unenviable reputation of being the most expensive polytechnic, though not the most expensive institution in the public sector since there are a number of colleges which easily out distance it. The management at NELP does not dispute its position at the top of the polytechnic league table with a unit cost of roughly £3,000 per student. This is several hundred pounds above the average for the polytechnics but still substantially behind the average cost of putting a student through a university.

It pleads extenuating circumstances, which in some respects are not totally unfounded. There are 16 sites and 30 separate buildings which are a drain on resources, particularly when the buildings which are inherited and adapted were never meant to accommodate the kind of environment now expected and are beginning to show their age.

One typical example is Livingstone House which was vacated and is still empty after water started coming through the roof, flooding and spoiling the library facilities. A worse problem was that the roof leaks exposed considerable amounts of asbestos which added to the ensuing chaos. The building was never designed for its existing purpose, having started life as a war graves commission factory and being later taken over by a cigarette company.

The polytechnic would like to start afresh with completely new purpose-built buildings to avert crisis. It owns green belt land at Waltham on which it would like to build and has plans drawn up ready to go but the problem is that it needs permission from the Department of Education which so far has not been forthcoming.

On one hand NELP will forcefully argue the reasons why it is a high cost institution but it will also accept its own liability on the other hand for those high costs. Mr Gerald Fowler, the director, argues that since he took over he has saved £5m on the estimated expenditure although in real terms he would concede that it has been more like £3.5m, which is not bad in little more than a year and a half.

Mr Fowler takes a tough attitude and as a former Labour junior minister of education he is not without some influence and contacts within the education establishment. He is not inexperienced in dealing with and empathizing with the unions and has had some success in persuading the staff, especially the academic, that it is better at this stage to stick together than appear divided in the face of the NAB 10 per cent cut exercise.

But NELP has a happy knack of riding the storm just when everybody expects it will fall flat on its face. In the last round of the negotiations of the advanced further education pool, it once again surprised the doom-mongers. It was given additional weighting to meet its extra costs but if, as looks increasingly likely, the days of further funding are numbered then NELP will have to come up with a long-term strategy to reduce its expenditure.

This has been partly met, though at cost, through the medium-term strategy agreed by the polytechnic's governors. A copy of which was sent to Mr Christopher Ball, the chairman of the NAB board, which involves reducing overheads, largely through staff retirements and by dealing with heavy drains on resources such as by merging Anglian Regional Management Centre.

One aspect which is perhaps not often recognized is that the polytechnic covers a vast area of the east of the country where there are few other large educational establishments and certainly no other polytechnics. It also provides for the largely underprivileged East End of London with all its problems of a declining manufacturing base and feeble up-take of those educational provisions which are available.

But most NELP employees, including union representatives, would agree privately that there is considerable room for tightening up all round to



Peter Toyne and Linda Austin at NELP - where that East End meets academe



East side story

make the necessary savings. The polytechnic's budget has been cut since 1980/81 by 20 per cent and its estimates that next year there will be a further 12 per cent largely through a policy of massive reductions in administrative staff which may prove a painful experience for the institution.

The NAB exercise caused some concern

In unison with some other institutions, the polytechnic's governors responded to the NAB exercise by querying "this hasty, blanket and hence somewhat insensitive exercise" as being the best to plan advanced further education. The time factor made them wonder whether the body would be able to make an informed judgment on the strengths and weaknesses, needs and potential of 380 widely disparate institutions.

They commented on the difficulty which the NAB seemed to have had in securing better weighting for part-time courses and doubted whether any simple weighting system could adequately reflect the difference between those colleges which deal mainly with non-advanced with one or two advanced courses and those, like NELP, where non-advanced work cannot be separated from much wider programmes of advanced work.

The wisdom of requiring colleges to calculate hypothetical estimates for 1984/85 on a two-year old base when the 1983/84 pool allocation was not yet known also caused concern. So that at the time of making its return, it looked as if the "top-up" from the three local authorities might be lower and the fee income might be higher but there was no way of knowing this in time for the exercise deadline.

As it was, the third authority, Waltham Forest, which had wanted to withdraw its responsibility for the polytechnic, has eventually decided to do so, leaving two Labour-controlled authorities - Newham and Barking and Dagenham - with dual responsibility. It was very difficult to predict whether there would be future extra funding from the joint education committee so, in its response, NELP outlined three hypotheses on funding.

It calculated its future budget for the NAB on the basis of level-funding; a cut by half; and no extra funding from the JEC. In the event, this coming year its "top up" will be cut by about £250,000, but the following year it is still in the lap of the gods.

The grouping of courses into programmes, required by the NAB, caused difficulties for NELP since its departments do not correspond neatly to this format. Its MSc in pharmacology and the graduate diploma in pharmacology

are lumped together under the same programme but pharmacology is also part of the BSc in applied biology which comes under another programme although the same staff teach on all courses.

In programme E, other technology and manufacture, courses in land surveying, in which NELP is considered to be a "centre of excellence" and the BSc in manufacturing studies are thrown together although there is no connection between the two, in the opinion of the rectorate and governors.

In their view the data which is being asked for scarcely relates to internal planning. No priorities were established for programmes because the polytechnic thought it would "mock sensible planning to single out whole programmes for what could be possible closure when many contained successful courses which should be retained.

The degree by independent study, which was pioneered by NELP, traverses the range of programmes depending on the subject which the individual student wants to study. So to single out any programme could seriously undermine the scope on offer to the potential student. As another example, any sudden cutback in funding for engineering could destroy the basic for the polytechnic's innovative BSc in manufacturing studies, which again appears in a separate programme.

The polytechnic hopes to keep its student numbers to the present level of 8,000, which includes 180 non-advanced students with an assumed reduction in overseas students of 90. Part-time students would stay at around 3,000 because it is envisaged that under the present weighting for part-time students it would be unrealistic to increase them. Full-time are expected to increase slightly while sandwich students are expected to fall off, owing to the difficulty in getting industrial placements, and post graduates would remain at the present level.

Academic staff are on the whole protected

Teacher training, following the Secretary of State's decision to close certain courses, is the only area where course closures and under consideration by the polytechnic at present. It would be that some of the surplus in staffing and resources will be mopped up through modular degree proposals presently under consideration by the Council for National Academic Awards for validation.

Academic staff are on the whole protected under the polytechnic's longer term strategy but it does consider that there is overstaffing in science, engineering and business manage-



Gerald Fowler: a £5m saving in one and a half years

ment. The Anglian Regional Management Centre, which serves the whole of the east region of the country, does not pay its way any longer and costs the polytechnic £600,000 a year.

It was set up in the early days of the non-capped pool and even though the funding has now changed and the money which local authorities are allowed to spend from the collective pool is capped, they still do not pay for students who study on the diploma of management studies course run by the ARMC. The polytechnic wants to see some sort of merger go ahead with the business studies faculty and more undergraduate work undertaken.

It is through a drastic cut in administrative staff that the polytechnic plans to reduce its overheads as laid out in its medium term strategy. In the plan, the director and governors would like to get staffing down to 415 from 550.

Both unions and management have been discussing proposals in the shorter term to reduce administrative and clerical staff by 100 by next September, through which the polytechnic hopes to make an additional 12 per cent cut in its budget. If achieved this would mean premature retirement were introduced and encouraged a couple of years ago, the administrative staff will have been cut by half.

The rectorate's hands are tied as to how far it can go with redundancies because of the policy of no compulsory redundancies of the two supporting local authorities. But this means that some departments suddenly find themselves much worse affected by staff loss than others, because the people who leave are largely self-selecting. The bureau's division, which has responsibility for maintenance, cleaning and

refectory services has experienced a two-thirds cut in administrative staff. Manual staff have still been largely unaffected by reductions so far.

The staff side convenor for administrative, professional, technical and clerical staff, Linda Austin, asserts that the polytechnic has underestimated the workload which arises from a multi-precinct institution. Academics, in her opinion, are already beginning to understand what the cut in administrative staff actually means to them and feeling the pressure of their workload increasing through taking on admissions work and circulating schools. All of which was previously done by clerical staff.

Administrators have left, disillusioned by the sudden changes, preferring to go by voluntary means rather than face the possibility of enforced redundancies. "Many have been threatened by the possibility of redundancies if they did not go voluntarily," said Mrs Austin. "Many have seen the writing on the wall, preferred to take the small severance pay, and go, when they see no future for them at the polytechnic."

The upshot is that morale is low, encouraging a general pessimistic climate within the polytechnic which rubs off on to everyone who works there. The immediate task for NELP is that it must come up with an academic plan which is far-reaching and persuasive enough to convince both the NAB and those who work in the institution that it has a worthwhile future. This task has fallen to Mr Peter Toyne, who very recently took up the post as an assistant director.

Mr Toyne is a member of the NAB continuing education working group and it is in this area of continuing education and the polytechnic's responsiveness to the needs of the local community that NELP hopes to go forward. Sitting in the window at the Duncan House site where a six-lane motorway divides the polytechnic from the adjacent housing estate, he reflected on the need to bridge the gap which that symbolized between the educational provision and its potential customers.

One main fear with the NAB exercise is that the polytechnic is not left "high and dry" by any policy decision this summer which would restrict the broad base on which courses for the community would be developed into the 1990s. If it is forced to specialize and narrow down to certain key subjects, then exciting developments which are now under consideration in credit transfer and two-year degrees might be stifled at birth.

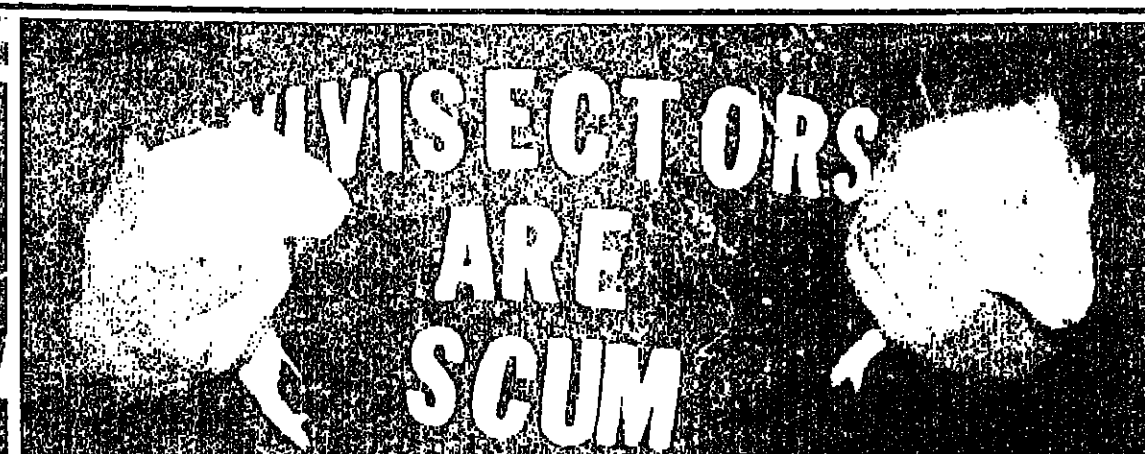
Mr Toyne points to the fact that the East End has one of the lowest take-ups for higher education, and the polytechnic is conscious that if it is to widen its appeal to potential students then it has to keep the sort of subjects which people will want to study.

The existence of centres of excellence and keeping the overall diversity of courses are not necessarily incompatible. And another point which NELP makes with some conviction is that no planner can expect lower paid people to trail half way across London for a certain course. The consumer is likely to vote with his or her feet and if the NAB were for the sake of an example to make Middlesex Polytechnic a centre for humanities while reducing or closing the faculty at NELP it is highly likely that the very people who ought to be being encouraged to go on such courses would be unable to afford the travel or baby minder costs to cover the extra distance.

Another concern is that any financial penalty imposed by the NAB would be based on phased reduction to minimize academic damage.

"A level of reduction which could be accepted over three years, and with which the polytechnic could cope with out serious loss of educational provision, could if imposed in toto in only one year of those three, lead to otherwise avoidable course closures and staff redundancies," the response read. This might result in artificially high unit costs, which in turn could be used as a reason for further reductions in funding which could involve the polytechnic in a steady and steep decline until no longer institutionally viable.

NELP has adopted a tough and in human terms, expensive three-year strategy for reducing costs. Its main hope is that it will be able to complete the task without, in the words of Robbins, undue external "irruptions."



New tests could mean the end to experiments into animals - and the need for Animal Liberation Front raids

The glass alternative

Plenty of academics are willing to investigate how to replace animal experiments with *in vitro* tests. Jon Turney reports

The long-awaited Government white paper on scientific procedures using living animals, published this month, seems unlikely to stem the tide of protest washing round medical research departments and toxicology laboratories. Any legislation based on the new proposals will be seen by animal liberation groups as no less a vivisectionist charter than the Cruelty to Animals Act 1876 which has been the basis of Home Office regulation of animal experiments for 100 years. Mr Brian Gunn, general secretary of the National Anti-Vivisection Society said the society was "bitterly disappointed" with the proposals, which would bring changes in administration of licences but few changes in scientific practice.

However, the white paper suggests one stipulation which will grow in significance in the next few years. It says licence applications should be accompanied by a sponsor's opinion whether "any alternative non-sentient method would satisfactorily and reliably achieve the purpose" of the experiment.

This is in line with the convention drawn up by the Council of Europe, which Britain intends to ratify, and which specifies that procedures using animals should not be carried out if there is any reasonable alternative. A strong interpretation of this provision could offer the anti-cruelty lobby a chance to increase pressure for replacement of a wide range of current tests with new methods. Richard Ryder, in his classic anti-vivisectionist text *Victims of Science*, due to be republished next month, concludes a survey of alternatives with his view that "if scientists cannot mend their morals then the laws may have to provide that final impetus to oblige experimenters to develop humane methods".

Britain is still a long way from statutory direction of research into new tests, although animal welfare groups in the United States have called for legislation to divert a proportion of National Institutes of Health research funds used for animal experiments to non-animal substitutes. But new British legislation, when it comes, may well help to ensure that researchers are made aware of the alternatives to animals which are already on the way.

The possibility of alternatives to animal tests introduces a new dimension into an already complex debate. Many of the positions adopted for and against animal experiments are little changed today from the views aired at the height of the Victorian anti-vivisection movement in the 1870s. But the technical questions then were relatively simple - you either did the experiments or you didn't.

Since then, physiologists and toxicologists have devised a range of methods for sustaining living material in more manageable forms than whole organisms - the American Ross Harrison managed to grow nerve cells in culture as early as 1907. As our understanding of cells and tissues has grown, mainly through animal experiments, these methods have grown more sophisticated. And there are now a powerful forces promoting efforts to turn them into workable alternatives for the large number of animal tests now performed - some four million a year in the UK alone.

The combination of many scientists' distaste for animal use and growing external political pressure furnishes one strong motivation behind the search for alternatives. But the expense and unreliability of animal tests provide equally powerful drives in the same direction. The drug industry's trade association, the ABPI, estimates that basic toxicology testing for a new compound costs around £500,000 under current regulations. Even then, the results may be a poor guide to a

drug's effect on patients. There are many examples of chemicals which harm animals which are quite safe for human use - and more tragic cases of drugs which cleared the tests but were unfit for prescription, like thalidomide. It proved difficult to reproduce the birth defects induced to thalidomide in many animal species long after its effects on humans were all too well known.

One response to these species' differences is to call for still more animal tests in the hope of picking up harmful effects in at least one series - if not rats, then guinea pigs, or dogs, or hamsters, and so on. But this increases costs still further, and although the public demands assurances of safety the industry's plea that more money spent on testing takes funds from research also carries some weight.

This means that there is every incentive for the pharmaceutical industry to back work on alternatives to support its political case, and the ABPI estimates that several million pounds are spent every year in the UK in "in-house" research on non-animal systems. ICI alone spends over £1m a year looking for new screening tests - the first step on the road to a new drug. And this is bearing fruit. The company maintains that the number of animals used in screening activity of new compounds has gone down by more than 40 per cent in the last 10 years, while the number of compounds screened has gone up.

Assessing the immediate prospects for further reductions is tricky because the whole debate is now so polarized. The anti-cruelty lobby tries hard to give the impression that all animal tests are useless and, anyway, alternatives are just round the corner if only the scientists would take them seriously. The ABPI and the drug companies, on the other hand, stress that no

isolated cell or tissue can substitute for the whole animal in studies of, say, blood pressure, and that toxicology is still heavily dependent on animals.

The picture that emerges from university laboratories is one of cautious optimism that *in vitro* (that is, in glass) tests can be made more useful, replacing animal tests a few at a time over the next few years or decades. In fact, academics may find themselves in an unfortunate position. They are subject to some of the same cost pressures as industry. Only carefully - and expensively - bred, housed, heated and fed animals give useful, reproducible, experimental results.

But basic research in biology and medicine appears likely to need animals long after they have been replaced in drug testing and screening. So university departments may still be a focus for anti-vivisectionist protests after the drug and chemical companies have cut their exploitation of other species.

In the meantime, academic researchers will be able to point to their efforts to help replace animals in pharmacology and toxicology. The best known *in vitro* test to date, the Ames test, is named after the Berkeley biochemist who devised it. Bruce Ames got worried about chemicals in the environment after he "read what was written on crisp packets", and decided to see if his expertise in bacterial genetics could help set up a simple test for the myriad of artificial compounds in food and other products.

The test he proposed in 1975, based on whether a substance can cause mutations in one bacterial species, is still a good illustration of the advantages and disadvantages of *in vitro* systems. It's cheap, quick and unambiguous. But the test assumes that causing mutations is a sign that a compound could cause cancer. This is probably

true, but the reverse logic need not apply. And there is a general problem with tests using simpler organisms: in a mammal cancer may be induced not by the original compound but by a modified form of the substance produced in the organism itself. Ames' team tries to allow for this by adding enzymes from human and rat liver to the broth the bacteria grow in, but this is only a partial solution.

Animal tests for cancer hazards are also imperfect, of course. But increasing public concern about environmental hazards seems unlikely to permit replacement of one set of flawed tests by another, equally imperfect. The endurance of the notorious LD50 test, which provides a rough index of toxicity by force-feeding animals until half succumb - and is widely regarded as worthless - shows how difficult it is to remove an established procedure from the rule book.

Nevertheless, organizations like the Fund for Replacement of Animals in Medical Experiments (FRAME) and the Humane Research Trust hope that new tests can be developed to a pitch where they offer a real prospect of replacing animal use. FRAME recognizes that this will be a long task, and last year raised £250,000 from drug and cosmetics companies for a four-centre trial of cell-culture toxicity tests. The centres involved are the University of Nottingham Medical School - where FRAME's director Dr Michael Balls is a senior lecturer in the anatomy department - St George's Hospital Medical School in London, the Robens Institute in Surrey University and the Huntingdon Research Centre. Dr Balls said that the first phase of this programme, testing known compounds to check the results against existing tests, had gone remarkably well. The four groups were now ready to move on to blind trials.

"I want to see the fastest possible reduction in animal use, but I'm also very interested in the problem of predicting responses of the whole body from isolated cells, tissue culture and modelling", he said. Other researchers in the field echo this mixture of motives, and a new book just published by the Humane Research Trust shows the range of approaches this general problem has prompted in university laboratories.

The trust's volume *Animals in Scientific Research: An Effective Substitute for Man?* gives details of work on new tests ranging from Professor Paul Turner's use of isolated human cells in studies of drug action to Ewart Carson of the City University describing how mathematical models of biological systems can help in design of experiments using as few animals as possible.

James Bridges of the Robens Institute suggests that genetic engineering could contribute significantly to development of new cell lines for toxicity testing. And he stresses that "the fact that it is difficult with our present knowledge to see how *in vitro* tests could entirely replace *in vivo* ones must not be used as an argument against putting a major investment in the development of *in vitro* methods for assessing toxicity". The programmes of the trust, FRAME, and other funding bodies show that there are plenty of academics willing to turn their minds to this task if that investment is forthcoming.

It would be nice to ascribe this to the interest of the field and researchers' concern for animals. After all, as Ruth Clayton of Edinburgh University pointed out to me, most biologists like animals.

However, there is a less charitable view of scientists' influences, put in the trust's book by Dennis Parke of Surrey University. He writes: "political pressure supporting ethical objections to the use of animals for safety evaluation may do more to advance the scientific basis of these toxicological procedures than any academic pleading". Either way, the field is gathering momentum, and that should have results that all can applaud.

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John Piper explores plate tectonics – the branch of earth science which deals with shifting

Rock and roll on a massive scale

In scope and scale, that branch of the earth sciences known as "plate tectonics" could hardly be more ambitious and all-embracing. It accommodates very large-scale phenomena such as the interaction of continents right down to local events such as the formation of particular types of rock.

In the 15 years since the concepts were propounded, the main tenets have been established and such has been the success of the initial model in explaining the interrelationships of almost all geological observations, that it must rank as one of the most fundamental scientific advances of this century.

Following an extremely productive period of general application, the earth sciences are now entering a more reflective phase and are beginning to ask specific questions about the many subtle ramifications of the discipline with regard to regional and local geology, about the balance of the motivating forces, and about the way in which the character of the earth's crust has changed and evolved. This new phase promises to be equally stimulating.

To plot the progress of plate tectonics from hypothesis to established model, we must first outline the main features of the earth's outer shell. The most familiar component is the *continental crust* which covers some 30 per cent of the earth's surface, extends mostly to depths of some 30 kilometres and represents the end result of about 4,000 million years of abstraction of light material from the *mantle*. The mantle in turn incorporates the greater part of the earth's volume and extends down to the edge of the *core* some 2,900 kilometres below the surface and nearly halfway to the centre. The continental crust also possesses a higher proportion of the radioactive elements together with the elements which do not readily fit into common mineral structures. Because it is also highly buoyant it cannot readily be dragged down into the mantle.

The *oceanic crust* covering the remainder of the globe is of much less antiquity, ranging from zero to 200 million years in age. It is denser than the continental crust, notably because it contains greater proportions of iron and magnesium, and can more readily be carried back down into the mantle. It is also, in part, for this reason that the oceanic crust underlies deep ocean basins while the continental crust is upstanding. The relationship of these two types of crust have only recently come to be understood by the parallel development, mainly in the 1950s and 1960s, of two complementary hypotheses, namely *continental drift* and *sea floor spreading*.

The idea of continental drift seems to have originated with Francis Bacon in 1620 when he drew attention to the striking similarity in shape between the coastlines of Africa and South America. Following the appearance of Alfred Wegener's famous treatise *The Origin of Continents and Oceans* in 1915, the idea was kept alive mainly by geologists working in the southern hemisphere; they were impressed by the common incidence of ancient glaciations and the similarity of floras and faunas in the now widely-dispersed continents of South America, Africa, India, Antarctica and Australia. It was investigations into palaeomagnetism, the study of the ancient magnetisms of rocks, in the 1950s that stimulated the rapid development of this hypothesis because these studies were able to quantify independently the continental movements suggested by the study of ancient climates (palaeoclimatology).

Shortly afterwards, B. C. Bullard and co-workers at Cambridge began to match the edges of the continental shelves by computer. Using configurations broadly similar to those proposed by Wegener, they demonstrated a similarity much more impressive than that between the temporal coastlines. Many more refined geological investigations have also lent support to these continental fits.

The cause of continental drift became apparent with the parallel development of the second hypothesis, *sea floor spreading*. This represented the outcome of a greatly improved understanding of the ocean floor, and in particular the identification of a system of ocean ridges rising some 2,000-3,000 metres above the deep ocean (abyssal) plains. The axes of these ridges are frequently found to bisect the ocean basins and are characterized by shallow earthquake activity. In his attempt to link the character-

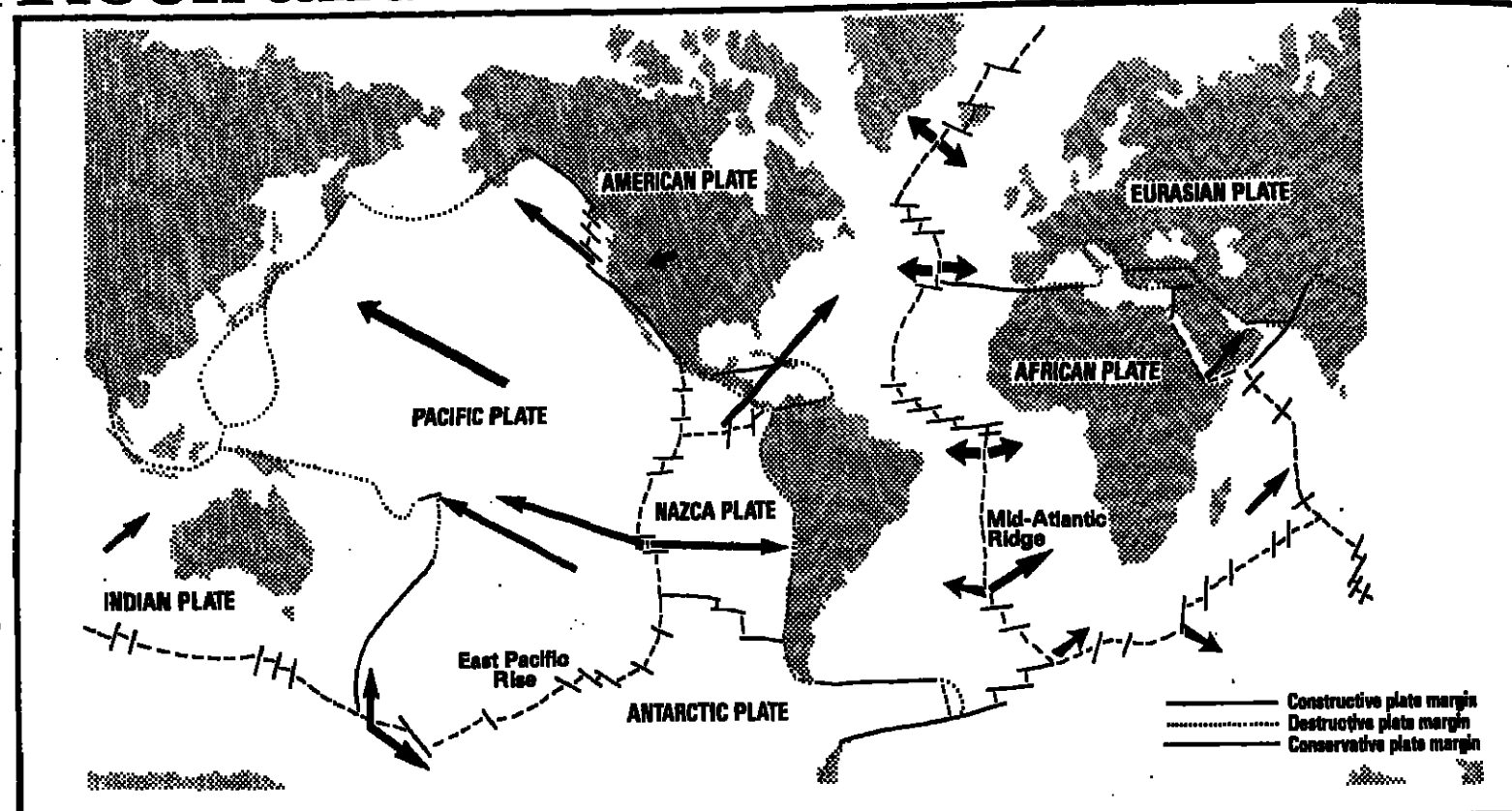


Plate Tectonics at the present time: the distribution of the major plates and their margins. The arrows show the directions and amounts of absolute motions of the plates over hot spots in the mantle below the asthenosphere. The length of the arrow in the Nazca Plate corresponds to a velocity of 10 centimetres per year.

istics of the ocean basins to global processes, the late H. H. Hess of Princeton University proposed in 1960 that these basins were created by the upwelling of hot mantle rock in currents which bifurcate at the ocean ridges and move laterally to form the ocean crust. To conserve the global area he suggested that this crust is carried down as relatively cold and dense slabs along the deep ocean trenches situated around much of the Pacific Ocean margin where large earthquakes originate at depths down to 700 kilometres below the surface. Hess regarded the ocean crust as a modification of the mantle but it is now known to have the composition of basalt, and is essentially that fraction of the mantle which first begins to melt out when it is heated to temperatures of the order of 1,200°C.

The evidence responsible for turning Hess's ideas into an established theory came from study of the magnetic field over the oceans. Near the ocean ridges this was found to comprise a sequence of strong and weak stripes oriented parallel to, and with a shape symmetrical about, the ridge axes. F. J. Vine and D. H. Matthews of Cambridge University were able to show in 1963 that these patterns corresponded to the history of the Earth's magnetic field which was by then known to have exchanged north and south magnetic poles in a rather irregular way over the past several millions of years. As ocean crust forms along the ocean ridges it becomes magnetized and preserves a record of the prevailing magnetic field in a conveyor belt fashion. By fitting the known history of pole exchanges to the observed magnetization of the ocean crust it has proved possible to deduce the direction and rate of growth of the ocean crust in many parts of the world. The comprehensive drilling programme undertaken by the *Ocean Drilling Project* has sampled the ocean crust in many places and corroborated the indirect evidence from the magnetic surveys.

The time scale is crucial

As this definitive evidence became available, many scientists began to see the crucial link between continental drift and sea floor spreading. A spate of scientific papers in 1967 and 1968 demonstrated how the creation of new ocean basins by sea floor spreading could curtail the continents apart and result in continental drift. The time scale is crucial to this link: the rates of growth of the ocean crust turn out to be of the order of centimetres a year and similar to the rates inferred for continental drift. The separate theories then began to be replaced by a single unified concept, plate tectonics. In

plate tectonic theory, the important elements are not the continental and oceanic crusts as separate entities. Instead, the Earth's outer shell is regarded as seven large, and many small, rigid plates which interact with each other either by growth, destruction, or lateral slippage at their margins. Some plates incorporate both continental and oceanic crust while others comprise ocean crust only.

Plate tectonics was not the brainchild of any single research worker. Several workers in complementary fields contributed to its evolution and refinement. W. Jason Morgan of Princeton University was the first author to use the term "plate" in 1968, and since earthquakes are the natural response to plate interactions, they provide the primary evidence for defining the size and shape of the plates. Hence it was seismologists, notably B. Isacks, J. Oliver and L. R. Sykes of the Lamont Geological Observatory who formulated the scheme as we now understand it.

In practice, the rigid plates are appreciably thicker than the crust everywhere except beneath the ocean ridges where they are actively growing. An increasing thickness of mantle material becomes frozen onto the ocean crust as it migrates away from the ridges. As crust and mantle cool they also become thinner by contraction. Since we observe that water depth plus any later sediment cover is directly proportional to the age of the underlying crust, the thermal contraction seems to be the mechanism responsible for the progressive increase in ocean depth from the ridges into the abyssal plains. Beneath the continents, portions of mantle have been welded on to the base of the crust at irregular intervals for at least 2,000 million years and the plates are much thicker here.

Collectively the rigid plates comprise the *lithosphere*. The underlying *asthenosphere* is that part of the mantle which yields plastically over relatively short periods of time to permit the plate interactions. These movements are most readily apparent to us in a vertical context such as the gradual and continuing rise of Scandinavia and the Canadian Shield since they were unburdened of their ice sheets some 12,000 years ago, and by the progressive rise of young mountain chains such as the Andes where light continental rocks are being squeezed together into tight wedges at the same time as the mountains are being unloaded by weathering and erosion at the surface.

However, the study of earthquakes also tells us that the mantle seems to be effectively solid right down to the edge of the core. This apparent contradiction arises because of the differing time periods over which the forces are applied: earthquakes waves

exert stresses which act for periods of a fraction of a second and the mantle responds to them like a perfectly elastic solid, but when the stresses are applied consistently for thousands of years (in geological terms a short period of time) the mantle flows as a fluid transporting the plates in a horizontal and/or vertical sense.

In a paper published by the Geological Society of Glasgow as long ago as 1929, Arthur Holmes conjectured that motions of the Earth's crust are driven by giant thermal convection currents. He envisaged convection cells ascending beneath elevated oceanic island "swells" and descending along deep trenches; the continents were considered to be carried apart by the limbs of the cells with "new ocean" forming in between. In essence this remarkable view is a forerunner of the one developed by Hess and it is still accepted today: the motion of plates from ocean ridge to deep sea trench reflects the visible half of a convection loop with a deep return flow taking place from trench to ridge to conserve the overall volume. Judging from the distances between ridges and trenches in the Pacific the convection loops must have horizontal dimensions of up to 10,000 kilometres.

No very precise relationship can exist

However, it is also apparent that no very precise relationship can exist between convection cells and plate boundaries. Some plates have very irregular shapes and whole segments of the ocean ridge system and abruptly offset along the conservative margins. This problem is a complicated one because it is certain that forces other than convective motions in the asthenosphere are involved: the slope of a plate from an ocean ridge down into a trench creates a gravitational driving force which can come into operation as soon as the ridge is established.

Complexities such as these preclude any direct inference about the sizes and shapes of convection cells. Some workers have used small variations in the Earth's shape and the global distribution of the plates to argue that the cells occupy the whole of the mantle. Others interpret the rather abrupt increase in seismic velocities 650 kilometres down as a compositional change; this and the absence of earthquake activity below 700 kilometres is taken to indicate that convection cells do not extend below this depth. Yet another school of thought has used theoretical and experimental considerations to argue that convection takes place at different scales on different levels in the mantle. It seems likely that chemical studies will go a long way towards resolving these uncertainties because the crust is

enriched and the mantle is correspondingly depleted in those elements which cannot readily be accommodated by the constituents of the mantle. The observed proportions of the radioactive isotopes of the rare elements samarium and neodymium suggest that something between 20 and 40 per cent of the mantle ultimately contributes to plate growth. This would be consistent with the asthenosphere extending down to the 650 km discontinuity. It is still too early to say whether this is coupled in some way to a separate convection system below 650 km.

The plates should not strictly be regarded as perfectly rigid with all interactions taking place only along the margins. The continental portions of most plates for example are crossed by active or quiescent rift zones, up to several hundreds of millions of years old, and sometimes, as in the Missouri Valley in 1811-12, they are the sites of enormous earthquakes, comparable in size to the large earthquakes observed at the destructive margins. Some of the large active rifts, notably in East Africa, remain something of an enigma. Although they have histories of volcanic and tectonic activity going back several tens of millions of years, and geophysical studies show that the crust is being wedged apart at depth, no actual parting of the continental limbs has yet taken place. It is generally assumed that these will be the next sites of continental break up and drift, but it seems that some major changes in the asthenosphere below will first be required to bring this about.

Another indication that the plates are not truly rigid is the observation that they have sometimes been pierced by liquids derived from the mantle below. The African crust has been first domed and then punctured by volcanic action over the past several tens of millions of years, and in the Pacific area the oceanic crust has been placed at positions remote from the constructive margins to build up chains of islands such as Hawaii. The chemistry of these rocks is in many ways different from the basalts at the constructive margins and one possible explanation is that they originate from reservoirs in the lower mantle which have broken through the asthenosphere at localized "hot spots".

The hot spots are important in another context. Our determination of the rates of motion between plates are all relative to each other. They tell us nothing about plate motions with respect to the Earth's axis of rotation. These absolute motions can only be described by first defining an independent frame of reference. Since chains of islands in the Pacific have formed progressively as the plate has moved over hotspots at about the same rate as

crusts and the movement of continents over millions of years

the plate has grown from its constructive margin, it seems likely that these hot spots define a frame of reference linked to the mantle below the asthenosphere.

Recent technical developments will allow us to measure plate growth and destruction as they are actually happening. Techniques of very-long-baseline radio wave interferometry (VLBI) and satellite laser ranging permit the measurement of distances of up to hundreds of kilometres to an accuracy of a few centimetres. Changes of this magnitude are taking place along many plate boundaries over time periods of a few years and studies presently under way should establish the current directions and rates of motions between plates within the next five to ten years.

These studies will be important, among other reasons, because they will provide us with an instantaneous guide to plate movements. Our present estimates predicting plate movements around a few centimetres per year come from the geological and magnetic data and are the average movements over half a million years or more. In reality these movements probably take place in a rather non-uniform fashion. Much of the energy is released in concentrated zones, especially along the destructive margins, and then released by the sudden movements producing major earthquakes.

However, not all of the story can be determined from seismic studies alone. Examination of several plate boundaries has shown that the observed earthquakes account for less than 50 per cent of the relative plate motions inferred in other ways. It seems that the remaining motions must be accounted for by aseismic displacements (i.e. not producing earthquakes).

In part this probably represents a limitation of the seismograms in earthquake observatories which are mostly confined to detecting waves with sufficient amplitudes and with periods ranging from 0.1 to 10 seconds, but geodetic studies in such areas as California also suggest that aseismic motions play a major role. Attention has focused on the San Andreas fault which defines where a conservative margin. In this case between North American and Pacific plates, is exposed for study on a continent. Geodetic studies here may require some more years of work before their implications become clear. In the San Francisco area for example, relative movements until about 1950 were dominated by the after-effects of the 1906 earthquake and a pattern of wider significance was only begun to emerge since then.

Since some plates have more destructive margin than others and the rates of growth at constructive margins vary from plate to plate, it is clear that some will grow at the expense of others. At the present time for example, the Antarctic Plate is growing while the Pacific Plate is contracting. If a plate consists only of oceanic crust it may ultimately be entirely consumed and disappear without trace. In the absence of other changes, systems of oceanic plates always evolve to reduce the number of plates and hence the cumulative length of the margins. It will then require a fundamental change in the asthenosphere convection to

break up more continent and create new ocean basins.

Some prophetic visionaries have extrapolated the present rates of growth and consumption into the future to predict what the Earth's surface will look like millions of years hence. The main features are a progressive growth of the Atlantic Ocean at the expense of the Pacific until America and Asia collide, with Africa continuing to nudge up against Europe as the Mediterranean Sea is closed.

Extrapolation into the past is more satisfactory because it leads to models which can be tested against the geological observations. By progressively subtracting the new oceanic crust from the present plate system we find the North Atlantic closed up some 60 million years ago, the South Atlantic closed up by 100 million years ago, and Africa, India and Antarctica and Australia together some 200 million years ago. This agglomeration of the continental crust into a single supercontinent is known as Pangaea and the major features of the reconstruction have been confirmed by both geological and palaeomagnetic studies on the continents. The sequential break up of this supercontinent about 200 million years ago carried apart areas which had experienced a common faunal and climatic history for at least 100 million years prior to this.

Results which conform to a pattern

The system of plates on the globe was then much simpler than the one which exists at present, and it poses the question: "did the pieces of continental crust come together and then break apart again or did a single continent, perhaps comprising a component of only two or three large plates covering the globe exist indefinitely prior to this?" No ocean crust remains undisturbed from these times and to find out what happened prior to 200 million years ago we must have recourse to the continents. Here there are several important clues. Within old mountain chains in Scotland, eastern North America, Norway and elsewhere there are pieces of old ocean crust, first formed about 450 to 550 million years ago which have since become caught up within folded continental rocks. Also, palaeomagnetic investigations show us that this reconstruction did not exist in its entirety prior to about 350 million years ago, and we infer that Pangaea was a transient phenomena formed as ocean basins closed up and several large pieces of continent were welded together.

There is, however, an increasing body of evidence that a radically simpler style of plate tectonics existed during the eras preceding the formation of Pangaea. In part, this is a consequence of changes in the main driving mechanism, thermal convection. This is driven largely by the decay of the natural radioactive isotopes of potassium, uranium and thorium. As the breakdown from parent to daughter elements proceeds, the heat produced as a consequence of gamma ray emission falls off exponentially with time. During the early history of the Earth, heat release and thermal

convection were much more active and took place on different levels and scales to that operating at present.

Recently I have shown that palaeomagnetic results from old rocks of the continents conform to a single pattern which allows the fragments of crust to be pieced together like a giant jigsaw as they were more than 1,000 million years ago. These results demonstrate that the continental crust first formed into a cigar-shaped body as giant convection cells amassed together material abstracted from the mantle by vigorous thermal activity prior to 2,800 million years ago. Initially this supercontinent was hot and relatively stronger than the oceanic lithosphere, and it yielded to stresses exerted by the asthenosphere in a ductile fashion. Gradually, as it cooled, it began to break up in a brittle fashion, first, in a limited way, about 1,100 million years ago and later, on a large scale, about 570 million years ago. The dismembered fragments were progressively collected together into the supercontinent Pangaea by about 350 million years ago.

There are several interesting consequences of the picture that is emerging of the early Earth. For one thing, the present system comprising several large and many small plates is probably more complex than any system that has existed before. It is however, relatively sluggish. During earlier more mobile phases the continental crust sometimes moved very rapidly (several tens of centimetres per year) with respect to the rotation axes. Several phases of active convection in the ancient asthenosphere can be recognized by the different ways in which they mobilized and deformed this initial supercontinent. Another noteworthy sign is seen in the distribution of economic minerals within the crust. Many chemical elements important to our way of life form only a very small fraction of the bulk composition of the Earth, but they can be concentrated in useful amounts by repeated melting and crystallization processes in the mantle because they are not readily accommodated into common mineral structures. Many of these elements are found within restricted zones of the continental crust and reflect the end result of segregation in convection cells beneath the ancient continent. This thermal activity prior to 1,000 million years ago either emplaced these metals into the crust, or into a position beneath the crust where this could be achieved by later events.

Thus plate tectonics is coming to be recognized as an evolving system in both the short term (millions of years) and the long term (hundreds of millions of years). In the most distant past, the plates were large and simple. They were also less rigid and activity which then took place within them has now become effectively confined to the margins. Ultimately the radioactive heat production will become too small for convection to be sustained and the Earth will cease to be a mobile planet, its surface will then become fossilized in the same way that the surfaces of Mercury, the Moon, Mars and (probably) Venus have long since ceased to be active.

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The continental crust, 200 million years ago: the supercontinent, Pangaea.

MAILESTONES

Richard Gombrich chooses Conjectures and Refutations by Karl Popper

When I was an undergraduate I had a marvellous piece of luck: Karl Popper asked me to help edit a collection of his papers. My work left few traces on the book which emerged, *Conjectures and Refutations*; but on me it made a deep impression. I had already read *The Open Society and its Enemies*, which permanently influenced me both by its anti-totalitarian arguments and by its clarity of exposition; *Conjectures and Refutations* introduced me to a wider range of Popper's thought. His more technical work on scientific method I am too ignorant to follow; but I could understand and assimilate almost everything in *Conjectures*. Ever since, I have tried to be guided by Popper's ideas in my teaching and research. He gave me the confidence to pursue problems which "may cut right across the borders of any subject matter or discipline"; so that while my career is in Sanskrit, my interest in Indian religions has taken me into anthropology, history and religious studies.

Comparative religionists (as they used to be known) have wanted to find an essence of religion, an essence which should include a belief in gods; they have then argued that Buddhism is not a religion – for it is not atheistic! Popper showed me the futility of questions of the type: "What is the essence or true nature of X?" Instead of asking, "What is the essence of Buddhism?" – a question usually followed by chiding Buddhists for having missed the answer – I wondered what Buddhists in a traditional Buddhist society believe and practise. So I set out to study Buddhism in a Sinhalese village. I think my nominalism paid off.

I soon found, for example, that a few Buddhists disbelieve in gods but most do not. However, they say that "belief in gods has nothing to do with religion". That is because for them a religion is a way to escape from the inevitable sorrows of this world, notably aging and death, and no god can help you to do that.

Popper holds that intellectual advance is possible only through conjecture and refutation. We have to gather facts selected for their relevance to a problem or theory. I could rapidly see and understand the Buddhist view of the link (or relation) between theism and religion because I approached them with a problem in mind. I could refute the conjectures that Buddhists are all atheists and that religions necessarily include belief in God or gods.

However, I had not taken Popper's advice wholly to heart. Like many new anthropologists, I suspect, I did imagine that I could begin by just "observing". I spent my first few days in the village in a small house used by a government agricultural adviser. He shared my passive attitude to the human environment and as a result had little to do. Waiting for data to turn up, as he for clients, I was likewise idle. I was jolted out of my passivity when, hypothesizing that I was a fellow spirit, the agriculturalist invited me "to go for a loaf". I felt I should stop wasting time.

Anthropologists investigate kinship that seemed a commonplace to start. In the company of a village elder I began a tour of the village, attempting a census. "How many children have you got?" I asked a householder. "Seven." "Sons?" "Five." "Daughters?" "Four." I gave up after one morning the futile quest for facts of which neither the villagers nor I could see the relevance. I became a pupil at the local monastery and so acquired a framework for formulating questions, a norm against which I could match what individuals actually believed and did.

That one can only see what one is looking for first he illustrated from the experience of a friend and colleague who wrote an excellent book

on the most important Buddhist shrine in Sri Lanka, the Temple of the Buddha's Tooth in Kandy. He must have witnessed many times the midday offering of food before the Tooth Relic, a ritual he describes in apparently exhaustive detail. While I was chasing another hare, Sinhalese ideas about former Buddhas, a monk told me that the midday offering at the Tooth Temple is daily divided into 32 parts. Nothing of that in my friend's book. So I went and asked. It was true. My friend could not see the 32 portions because they are conceptual; probably there is no visible sign that in the minds of the officiants the rice offered is in 32 parts, for 32 Buddhas. And though I was told that 32 curries are prepared, I would bet that on a given day one would count perhaps 30, 31 or 33.

Popper has logically demonstrated the inadequacy of describing human behaviour (such as ritual) as mere behaviour, without regard to the intention behind it. Here simple observation could not reveal what is significant to the participants in the ritual, an idea which is of historical interest and moulds their behaviour, though not obviously. As Popper says, "observation statements are always interpretations of the facts observed". An ethnographer's description, just like a linguist's translation, is always an interpretation open to criticism and improvement.

I still have drawers full of "facts" – notes, slides, tape recordings – which I have never been able to use. On the other hand, only when one starts to write up and so clearly formulate one's theories does one find that one lacks the very fact crucial to one's argument. I am sure most anthropologists have had this experience.

But not only anthropologists fall victim to indiscriminate fact-finding. I have known that the most widespread and serious problem of research students in all the fields with which I am acquainted. They get smothered by facts. If only they set out with a definite problem in mind, however simple, they would write better theses and in half the time. I believe a surfeit of material, due to a dearth of hypotheses, to be the main reason both why so many theses are never finished and why so many which are finished cannot be published without substantial revision.

Popper has shown that human affairs result from the interaction of not only matter and minds but also what he calls "World 3", the abstractions created (often unintentionally) by human minds, abstractions like the contents of books and the rules governing institutions. "World 3" justifies an interpretation of religious and cultural history which assumes that something more than bodies and minds is causally operative – without assuming that that something is good.

This approach may enable one to steer between two simple-minded views of religions: that they are produced just by inspired individuals; or that they are mere epiphenomena of socio-economic conditions. But what I find most fruitful as a historian is Popper's theory (propounded in the paper "Towards a Rational Theory of Tradition") of the unintended consequences of voluntary actions: "It is one of the striking things about social life that nothing ever comes off exactly as intended". I see the history of Buddhism as an unintended (which is not to say unworkable) consequence of the Buddha's preaching that life is suffering but there is an escape. No doubt one could say something analogous about Jesus and the history of Christianity.

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BOOKS

Angels and demons

by John Lucas

Woman and the Demon: the life of a Victorian myth by Nina Auerbach
Harvard University Press, £12.25
ISBN 0 674 95406 8

Corrupt Relations: Dickens, Thackeray, Trollope, Collins and the Victorian sexual system by Richard Barckman, Susan MacDonald and Myra Stark
Columbia University Press, \$32.50
ISBN 0 231 05258 8

Dickens and Women by Michael Slater
Dent, £15.00
ISBN 0 460 04248 3

Much contemporary criticism is based on the usually unexamined proposition that authors are not to be trusted, and that a work of art can be fully understood, explained and judged only when there is a full recognition of the ideological standpoint from which it came to be written.

Sex is part of ideology. What happens when a male novelist writes about women? And what happens when this author writing about women is himself writing about authors whose ideological standpoints will be thought to affect their views of the subject? I draw attention to these questions because all of the books under review are about ways in which women are presented in Victorian fiction (and in Auerbach's case, in poetry and art also). *Woman and the Demon* and *Corrupt Relations* both point to gaps which they claim yawn between "official" presentation and meaning, on the one hand, and sub-text and half-hidden implications, on the other. In their question whether some of the images of women in the texts they study could really have been meant, or have been meant in the ways that their creators seem to have approved.

Nina Auerbach claims that her book is about "the Victorian cultural imagination, in the chaos of its apparent inconsistency and the intensity of its underlying coherence." That coherence has to be reassembled from "fragments and shards." Writing about their chosen texts, the authors of *Corrupt Relations* remark that "These narratives are distinguished by those gaps, anomalies, divergences, contradictions, uncertainties, and ambiguities that have provided the point of entry for structuralist, semiotic, neo-Freudian, Marxist, and deconstructionist critics." They do not say which flag they sail under, but they obviously take it for granted that the gaps exist, so that any critic worth his salt will be required to speculate about them. Michael Slater is largely free of an interest in gaps and divergences, but it is not difficult to see how Nina Auerbach would be quick to argue that he is complicit with Dickens and that, whether he means to or not, he endorses as truths what are no more than sexual, ideological stereotypes.

It is essential to try to explain the argument of *Woman and the Demon*, which, because it is very subtle and in a sense exists only in and through its example, I shall inevitably make seem cruder than it is. Ms Auerbach is struck by the fact that when she directs close attention to any amount of Victorian literature and art she encounters a remarkable disparity between "official" images of women and what those images unofficially reveal or imply: Women are represented as angels and demons. But the angels often seem demonic, and vice versa. In addition, the women who are portrayed as victims - fallen women, old maids - appear somehow to absorb most of the life of the works of art in which they appear. Victorian morality says one thing about fallen women, Victorian art hints at quite another. The following passage is as close as Auerbach comes to a statement of her thesis:

The preternaturally endowed creature who taunts conventional

morality as old maid and fallen woman, seems alien to the approved model of womanhood. Victorians were used to revere. Officially, the only woman worthy of worship was a monument of selflessness, with no existence beyond the loving influence she exuded as daughter, wife and mother. By contrast, the woman I claim is at the centre of Victorian woman worship seems a monster of ego. As angel, she is militant rather than nurturing, displacing the God she pretends to serve. As angelic demon, she becomes the source of all shaping and creative power, dropping the mask of humility as she forecasts apocalyptic new orders. As old maid, she simulates meekness while proclaiming that the world is all before her new dispensation. As fallen woman, she sooms meekness for the glory of her own apotheosis. Oddly, these subversive paradigms are only incidentally feminist. They infuse the writings of women and men alike, dominating works famous and obscure, radical and conventional, experimental and popular. They are not limited to the underground code of an oppressed female tradition; they pervade the Victorian imagination.

There is a high degree of generalization in that passage, as there is in the book as a whole and I find it worrying. What, for example, am I to make of the remark about the "approved model of womanhood" "Victorians were bred to revere"? All Victorians? Everywhere? Always? In the factory? On the farm? And as for the Victorian imagination to which Auerbach so confidently gestures: surely that is a concept of small use in a study devoted to such disparate texts as Auerbach wants to consider? She may wish to invoke it, but she has great trouble in making it solid or believable. Not only that: her readings are frequently so perversely ingenious as to suggest that her entire argument is built on sand. Let us take one of her examples: of a fallen woman "who spurns meekness for the glory of her own apotheosis".

Auerbach claims to see in Rossetti's *Found* a meaning which subverts what the painting apparently offers. The fallen woman "crouches against a wall despite the urging of her former suitor".

In the explicit narrative [the woman bears a resemblance to] last rather to indifference, covering the woman as the net imprisoning the lover's calf. But simultaneously, the wall is an escape from that very net, represented by the lover's clutch. Retreating from compassion, Rossetti's fallen woman is aligned through the strength of the wall with the most substantial masses in the painting.

But as soon as you study the painting you recognize that the wall isn't at all strong. Its perspective is so comically awry that it looks as though it is going to fall in two different directions at once. You could, of course, try to argue that Rossetti's failure to control perspective is deeply symptomatic of an inner conflict of interest. You could equally well argue that the canon which so improbably steels up out of the ground behind the author represents that phallic would-be power and destructive energy from which the woman shrinks. Nor would this be wrong. It would, however, strike as obvious what *Found* is a rotten painting. And this leads to a more general point: that much of the evidence on which Auerbach relies can be read in the ways she wants simply because it is so inadequate as art that just about any case can be based on it.

This is not to deny her ingenuity. Auerbach shows how complex is the relationship between Holman Hunt's "Light of the World" and "The Awakening Conscience". It appears that the model for "The Light of the World" were Elizabeth Siddal and

Christina Rossetti.

If we remember an earlier Protestant visitation, that of Milton's angel to a newly fallen Eden, where he blessed Adam with a vision of future history and redemption from which Eve was excluded, we begin to appreciate Hunt's inversion: in these companion pieces it is the oblivious singing man who is excluded from heavenly confidence. Both Hunt's savior seeking entrance to the house and his fallen angel seeking a way out of it transmute traditional Christian iconography into a peculiarly Victorian typology of domestic female divinity.

Once we leave aside a contentious interpretation of Book XI of *Paradise Lost* we will accept, I think, that Auerbach's case is both brilliant and audacious. But the case has its limits and they are quickly reached. *Woman and the Demon* is by no means as wide-ranging as its author seems to imagine. She refers to the obscure, the radical and the popular, as though she has raided a wide variety of sources for her thesis; and yet as the examples I have chosen make plain, she stays well within the mainstream of literary and artistic texts. She has nothing to say about "penny" novels, nothing about broadsheet ballads, nothing about music-hall songs or melodrama. In short her book is empty of any reference to that range of material with which she is in no position to talk of "the Victorian imagination".

In a sense this may not matter, for however widely she ranged the term would be meaningless. But in another sense it matters hugely, because the wider she chose to range the more she would have to recognize that her concept is in fact class-based and limited. In other words, she is not really investigating the Victorian imagination at all. She is simply identifying those habits of mind that certain people in certain positions agreed, consciously or not, was somehow or other the imagination of their age. And as that inevitably vague phrase ought to make clear, the texts she chose to think of themselves in such a manner is no reason for an historian of ideas to go along with them.

There is no such thing as "the Victorian imagination". There are instead individual imaginations. I accept that we are all affected by the times in which we live, yet the fact remains that some imaginations are a great deal more valuable than others. Auerbach's refusal to recognize this severely damages her book. Why, for example, does she have nothing to say about *Middlemarch*? Surely her insightfully complex ways of presenting fallen women are worth considering? Why does she not mention Browning's great poem, "A Light Woman"? It can hardly be that she lacks the space. If she can devote nine pages to Coventry Patmore she can surely find room for Browning? The answer is rather to be found in what is ahistorical, reductive and, I am sorry to say, philistine about her approach. What she finds difficult to allow is that writers and artists are not necessarily betrayed into revealing truths that are hidden from their consciousness, but that on the contrary they may well know what they are doing; and I think she is ultimately frightened by the fact that the greatest art is the most coherent as well as the richest in its implications.

Many contemporary critics, especially Marxists and feminists, deny the power of imagination. Indeed, the very idea of imagination is for them either a pernicious or worn-out term, at once self-deceiving and mystifying. It is true that Auerbach uses the word, but for her it is no more than a kind of pollen, stirred up by the age and settling idly. Certainly on a variety of people who as a result sneeze out what is then called art. It will not do. To repeat, individual imaginations work within history, but this is not to say that those bits of intervention we call art are the mere helpless reactions to ideas afloat in the atmosphere.

It is because Ms Auerbach does not really grasp this fact that she is so inadequate when she comes to write about Dickens. Dickens is bound to be the sharpest challenge to her idea of the "Victorian imagination" simply because he is our greatest novelist. He also has an enormous amount to say about women within the various social complexes his novels explore. I looked up Dickens in the index to *Woman and the Demon* and found "Little Dorrit" mentioned, 55. In a study that takes for its subject the ways in which Victorians imagined women *Little Dorrit* is mentioned! Mrs Merdle, Fanny Dorrit, Mrs Gowan, Mrs General, Maggy, Flora Fincham, Mr P's aunt, Pet, Daisy, Mr. Miss Wade, Amy. Mentioned! You might as well claim to study the Renaissance imagination in the context of regicide, say, and mention *Macbeth*.

Messrs Barckman, MacDonald, and Stark try to do a little better. Unfortunately, they also have a thesis, and because they aren't as clever as Ms Auerbach the thesis does its procrustean worst to deny Dickens's greatness. For them, "Dickens's special preoccupation, his most profound insight, concerns the multitude of ways in which corrupt patriarchal values have infiltrated basic family relations, so that their oppressive effect on parent and child alike persist throughout each individual's life." The novels are then picked over to find evidence of this, and with predictable results: their individuality goes for nothing, and their varying and various greatness is quite lost to sight. It does not surprise me that we hear nothing of the Bagnett family in *Bleak House*, because Dickens's way of writing about them "completely overturns the thesis". It does, however, overturn that all the relationships that are mentioned have to be cut, wrenched, and forced until they fit their place in the argument, for example:

The love between Amy Dorrit and Arthur Clennam can find expression and fulfillment only when it begins to satisfy the more basic needs of parent and child. [Amy] is a wife who is more maternal than erotic, more a refuge from a destructive social world than a partner in regeneration; more a symbol of lost cultural values than a lover and companion.

Faced with this, it is worth reminding ourselves that the novel ends with Amy and Arthur's marriage, and with them going "into the roaring streets, inseparable and blessed". If that does not make Amy a partner and companion, I do not know what does - except for the pages that Dickens gives to showing us her un-



Dickens's wife Kate, as painted by Daniel Maclise in 1846.

selfconscious goodness, the range and intensity of her love, and her qualities of kindness, magnanimity and imaginative understanding which are there wherever you look. And as to her being more maternal than erotic: what can this trio make of the flowers she brings to Clennam? "No thing had ever appeared so beautiful in his sight. He took them up, and inhaled their fragrance, and lifted them to his hot head, and he put them down and opened his parched hands to them."

But I suppose the sheer delicacy of Dickens's prose, the gracious suavity of his nuances, are bound to be lost on the kind of crude thesis-mongering that goes to make up *Corrupt Relations*.

It is a great relief to be able to turn to *Dickens and Women*. Not that Michael Slater is much better when it comes to discussing *Little Dorrit*. "That gentle yet strong passivity which Dickens saw as the nobler aspect of the truly womanly... in *Little Dorrit* becomes a positive force for good in the world."

Dickens for once manages to breathe life into his feminine ideal. "But we know about this ideal only from some, remarkably vivid, remarks made by Dickens to make when, it may be, he allowed his prose to click into automatic pilot. At all events, what he says when his imagination is not engaged and what he shows when it is, are two very different things. Because Slater has very little sense of the need to trust Dickens's imagination he ends up by offering accounts of his fictional women which are, in their way, as procrustean as those to be found in *Corrupt Relations*.

On the other hand, he knows an enormous amount about Dickens's life and in this respect his book performs several useful functions. Slater is interesting on Dickens's energetic involvement with schemes to help fallen women; he rehearses the novelist's various relationships, private and public, with female friends; and he conclusively demonstrates that Kate Dickens has had a bad posthumous press, and that she was far less to blame for the breakdown of her marriage than has usually been supposed. Indeed, much of the most interesting part of *Dickens and Women* is about the marriage, and here Slater is modest, tactful, and thoroughly illuminating. His book does not help us much with Dickens's art, but it can be added to the few indispensable works on his life.

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BOOKS

Marxist India

Communism in Kerala: a study in political adaptation by T. J. Nossiter
C. Hurst, for the Royal Institute of International Affairs, £18.50
ISBN 0 905838 40 8

The Indian state of Kerala, with its high literacy rate, its large Christian minority, its Nayar caste's matriarchy and above all its powerful Communist party (or parties, as it has had since 1964), has long attracted the attention of journalists, ideologues and academics. Yet until now we have never had a scholarly book-length treatment of its politics.

The range of T. J. Nossiter's volume is particularly impressive. He begins with a solid, extensive introduction to the historical, social and economic background to politics in Kerala. There follows an account of Communist activity there since the 1940s. We see the Communists emerge as a potent electoral force (which inclines them to centre-left parliamentarism), take power in the late 1950s, attempt reforms, split into two main parties and then - in the absence of a breakthrough to electoral majorities - face the dilemma of united front politics. This story is set, necessarily and intelligently, in two contexts: in the singular cultural and political milieu of Kerala, and amid the theoretical and factional controversies of Indian Marxism.

The author examines several different levels and arenas within the state's political system. There is plenty of high politics, in the councils of all-India Communist parties, in Kerala's cabinets and party high commands. But organizational doings at intermediate and local levels also get the extensive treatment that they deserve. Each of the three segments into which Kerala was divided in the British period is analysed separately, as are urban and rural areas and the sub-regions which result from ecological variations and from concentrations of communal and caste groups. This is, as a result, a splendid guide to the daunting complexity of a state which has previously inspired so many simplistic homilies.

Nowhere is this clearer than in his discussion of the reasons for Communist success in Kerala. This is a vitally important subject, given the serious organizational decay that has overtaken nearly every centrist party in India since the early 1970s - a crucial change of which Nossiter makes little mention. The most notable victim of decay is the Congress Party which for so long was India's central political institution. The rest of this is that the only major parties with effective organizations are the only parties which young idealists are joining are those of the Hindu-charismatic right and the Marxist left. Despite this, however, neither right nor left has yet made major electoral gains at the expense of the decaying centrists.

The Communists have little strength outside their strongholds of Kerala and West Bengal, where left governments are hamstringed by the distribution of power in India's federal system. Nossiter's explanation for their successes in Kerala has implications for the Left's prospects in other, more mainstream regions of India. If their advance has mainly been the result of conditions which are peculiar to Kerala - and it is in many ways a peculiar place when compared to other parts of the subcontinent - then those who anticipate a Marxist future for India may be mistaken. If on the other hand, it was the result of a tradition of resistance from below, the growth of literacy, secularization, increasing political sophistication (which is now observable in most of India) and other more general factors, then the capacity of the caste system and patronage politics to thwart the development of solidarity among depressed groups may yet prove to be ephemeral.

Nossiter provides no easy answers here, partly because his analysis is subtle, but also because he emphasizes somewhat different themes at different times. He sensibly rejects theories that attribute Communist gains to a manipulation of caste and communal sentiments. He agrees that these things are important, but shows that the Left has mobilized very substantial support along class lines. Elsewhere however, he argues that the success of the Left owes a great deal to conditions particular to

Kerala: the special nature of patron-client ties there, dispersed village settlements (uncommon in India), the high incidence of landlessness, the fragmentation and uneven distribution of landholdings, unique features of pre-modern social organization and unusually radical socioeconomic change decades ago in some areas. He leans heavily towards those who expect the Communists to remain confined within their regional bastions, although some discussion of their failure in Kerala to achieve the un-

assailably broad base of their counterparts in West Bengal is badly needed.

Nossiter has given us a scrupulous and authoritative study which fills a major gap in our understanding of India and of radical movements in the Third World.

James Manor

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Rural capitalists

Agrarian Elites and Italian Fascism: the province of Bologna 1901-1926 by Anthony L. Cardozo
Princeton University Press, £31.70
ISBN 0 691 05360 X

Some years ago Paul Corner published a detailed study of the origins of fascism in Ferrara, showing how it grew out of the complex economic and political structure of the rural province. Now Anthony Cardozo has produced a similar analysis of another central Italian province that was vitally important in the fascist take-off, Bologna.

The theme is in many ways similar to that of Corner's book. Once universal male suffrage existed, and once trade unionism and strikes were permitted, fascist squads were the only way of maintaining the economic and political power of local landowners and tenant-farmers. The squads arose just when the Socialist Labourers' Leagues were most militant and successful, in the summer and autumn of 1920, and just when socialist municipal councils had been elected throughout Emilia. Their purpose was to "re-establish control of the labour market", that is to break the unions' closed shop and reassert landowner power.

But Cardozo has another, more novel, argument. Basing himself firmly on provincial archives and land registers, he shows that fascism's main support in the countryside came from innovative, commercial-minded agribusinessmen, who were leaseholders rather than landowners, entrepreneurs rather than absentee landlords. The activities of these men are traced back to around 1900. By 1914 they had already turned the plains around Bologna into "field factories", producing wheat, sugar-beet, hemp and tobacco for local processing. Cardozo shows that they were the men most anxious to exploit the land for profit, most linked to local banks and industrial interests, and most likely to clash with the labourers' leagues.

Indeed, there was often sharp conflict among the agrari. The old liberal Establishment of absentee aristocrats lived off rents, not profits; some of them were quite willing to grant concessions to socialist unions, for they did not have to pay. The rise of the fascist squads meant the end of traditional landowner power and the rise of the entrepreneurial middle-classes.

The argument is well-documented and convincing as far as it goes. But we do not learn enough about these "new men" - who they were, where they came from, where they learned their technical abilities, and so on. Nor are we convinced by it as an explanation of the rise of Bolognese fascism. Fascism appealed to many other rural groups besides the leaseholders - to the new peasant landowners of the postwar years, to the smaller tenants, even to some of the share-croppers. Above all, Cardozo underestimates the urban and "militant student" aspects of early Bolognese fascism. The squads began operating in the province only in the autumn of 1920, when the students returned to university; and most of their leaders were urban too. Indeed, it is striking how few of Cardozo's commercial-minded leaseholders came involved in fascist politics, at least until after the fascists had clearly won.

In general, Cardozo's attempt to trace back the origins of fascism to the rise of rural capitalism, while illuminating, is subject to the same strictures as any other history of the "longue durée": it underestimates the role of particular and unforeseen circumstances and people. In this case, it also underestimates the impact of such obvious factors as the First World War, high inflation, fear of Bolshevism, and

frenetic patriotism. And, of course, the squad violence of 1920-21 might easily have led nowhere in particular. Events outside Bologna were at least as significant as any changes in the local elite in determining the outcome.

Despite these criticisms, Cardozo's book is a judicious and clearly written, and makes a real contribution to our knowledge of the rural scene. It is particularly good on the pre-1914 period, and as a study in economic history.

Martin Clark

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Anti-Nazi grumbling

Popular Opinion and Political Dissent in the Third Reich: Bavaria 1933-1945 by Ian Kershaw
Clarendon Press: Oxford University Press, £22.50
ISBN 0 19 821922 9

In 1980 Ian Kershaw published, in German, a study of the "Hitler Myth" - of the integrative aspects of Nazism. Now we have his companion volume, this time in English, which rounds out the picture by examining dissenting opinion. Together, these form one of the most informative studies available of how Germans reacted to the Nazi regime.

The book considered here examines popular opinion and dissent in three main spheres - economic and class issues, and the persecution of the Jews - first during the 1933-1939 period and then during the war years. By carefully sifting police and security service reports on morale and popular opinion as well as the "Germany Reports" compiled from exile by the SPD, Kershaw has presented a rich array of evidence about life in Bavaria during the Third Reich.

In his discussion of how various socioeconomic groups perceived their position in the Third Reich, and particularly in his examination of working-class attitudes, Kershaw fairly conclusively lays to rest the idea that the Nazis succeeded in creating a racial community that transcended class interests. But although economic concerns remained paramount in determining popular attitudes, the constant undercurrent of discontent did not really threaten the regime. Deprived of an independent organizational focus and faced with one of the most brutally effective police states ever constructed, the grumblers were neutralized politically. As Hitler noted privately in 1942, "if what people always say were decisive, everything would long since have been lost."

This, however, should come as no great surprise, for essentially Kershaw has demonstrated that people in Nazi Germany were much the same as people elsewhere. Where he really has broken new ground is in his examination of attitudes towards denationalism, issues and towards the Jews. It was not as a product of economic issues or class relations but over the defence of traditional values and prerogatives, in the area of Nazi-church relations, that the "deepest antagonisms and sharpest forms of dissent" arose in Bavaria. Yet these expressions of discontent too had their limits. The anger aroused by the attempt of Nazi zealots to remove the Bavarian Protestant bishop from office in 1934 and the campaign of the Bavarian Nazi Party leadership to remove crucifixes from schools in 1941 was unquestionably deep and bitter. But as opposition to the Nazi regime it was only partial, and it did not stand in the way of continued support for conservative-national goals

and values". This ambivalence of dissent and the strength of the Nazi appeal to traditional values were among the regime's great assets.

If dissent with regard to church-related issues was seldom total, opposition to the persecution of the Jews was virtually nonexistent. While antisemitism was "largely unconscious and clearly written, and makes a real contribution to our knowledge of the rural scene. It is particularly good on the pre-1914 period, and as a study in economic history."

Due in part to the structure of the book, there are points where the narrative gets a bit repetitive, and inevitably there are some topics which might have been given fuller treatment. Among these are the effects of military service, which structured the lives of millions of Germans and about which we still know surprisingly little. Another area left largely untouched concerns the ways in which the Third Reich affected family relations - for instance by exacerbating generational frictions. But these are minor quibbles. Taken together with the companion volume on the Hitler Myth, Ian Kershaw has written what ought to become a standard work on the relations between the Nazi regime and the German people.

Richard Bessel

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A hundred years

The Eclipse of a Great Power: modern Britain 1870-1975 by Keith Robbins
Longman, £14.95 and £7.50
ISBN 0 582 48971 7 and 48972 5

The difficulties of writing a brief but balanced history of modern Britain are nowadays so many that most scholars, if approached to do one, will wisely walk in the other direction. Given the explosion of knowledge in all areas, what should one include, what dare one omit? A strictly political-conv-cum-diplomatic account is no longer tolerable, even if some of the most exciting historiographical reassessments have occurred in those fields and need to be included. Social and economic history must occupy a large part, but where does social history in particular stop? Should one cover changing hair-styles as well as dress, pigeon-fanciers as well as amateur footballers, drinking habits as well as church attendance? And how much room does one give to changes in British thought, and culture, and science, and the countryside? The trouble with the seamless web of history is that it is extraordinarily difficult to untangle, and virtually impossible to weave into a single cloth again.

Given these hurdles, it should be said that Keith Robbins's *The Eclipse of a Great Power* has done very well. No doubt this is, due in part to its own very wide array of interests and publications, ranging from foreign policy to church history to the peace movement. It may also be due to his personal awareness that a book upon "Britain" ought to comprehend those large areas to the north and west of All Souls and the Athenaeum: the history he lectured at York, two a guest-house in Bangor, and is now a

professor in Glasgow. British history here means what it says; Scotland, Wales and Ireland get their fair share.

Above all, it succeeds because of his excellent writing style: pithy, concise, with flashes of gentle humour. It is clear enough for the undergraduate to follow, yet interesting enough for fellow academics to enjoy. There is no strong, underlying argument to this book, but rather a caution against sweeping descriptions of, say, the Victorian age being one of boundless self-confidence, or of the 1930s being a decade of unrelieved decay. Clever shades of grey, rather than stark black and white, are the colours here. The chronological subdivisions he employs are somewhat unusual (1870-1901; 1901-1931; 1931-1956; 1956-1975) since they ignore the normal peacetime/wartime divides, but they work well and contain much therein. It is very good on general political and social developments, competent on economic and diplomatic issues, and excellent on the churches. A further advantage is that it gives proper coverage of the 1960s and 1970s, rather than regarding those decades as a mere epilogue to his tale. The Beatles, the Profumo Affair, the Tokyo Olympics, the collapse of Rolls-Royce, and the creation of the "new" universities are now history, and are treated here as such.

And deficiencies? Every general textbook has its strengths and weaknesses, determined as much by the reader's prejudices as by the author's. To me Professor Robbins's book seemed weaker in its handling of literature and political philosophy (being presented here more as a list of names and titles, rather than offering a larger cultural interpretation on the lines, say, of R. T. Shannon's *The Crisis of Imperialism 1865-1915*). It is also quite deficient in the area of the history of science - which, to be fair, the author readily admits. But these seem modest defects compared with the strengths of the book.

Finally, one might take note of the useful "compendium of information" on pages 349-383. This clever assemblage of maps and of data upon population, election results, economic and religious trends, government expenditures, office-holders and so on, ought to benefit the A level and undergraduate reader for whom the work is intended.

The Eclipse of a Great Power is not a particularly apt title; it suggests a concentration upon foreign policy and grand strategy, which the book itself carefully avoids. It is instead a concise, balanced account of the past hundred years of British history, and as such bids fair to become a standard work.

Paul Kennedy

Paul Kennedy is professor of history at the University of East Anglia.

Parliamentary Research Services have recently published *Conservative and Labour Party Conference Decisions 1945-1981*, edited by F. W. S. Craig. Motions that have been considered are organized chronologically under subject-headings. The book costs £15.00.

G
Gower

MANAGEMENT OF A STUDENT RESEARCH PROJECT

K. Howard and J. A. Sharp

This book is a practical guide for all those students intending to write an undergraduate dissertation. It provides a step-by-step guide to the selection of a topic, the formulation of a research project, the collection and analysis of data, and the writing of the dissertation. It is written in a clear, concise, and accessible style, and includes numerous examples and exercises. It is an essential book for all students undertaking a research project.

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Peter Scott

Leverhulme study programme: extracts



The term higher education conjures up many images. For some it is primarily a community of disinterested seekers after truth, who are sometimes indistinguishable from the remote and ineffectual dons of Hilaire Belloc. Others see academic institutions as sources of intellectual power that can be focused according to social priorities. Some imagine a wholesome but carefree environment for young adults before they embark on the serious business of life, others the inculcation of knowledge that will be directly profitable to student and to society. A more recent idea is that universities, polytechnics and colleges should be wider communities, with people dropping in from time to time throughout their lives.

Higher education is all of these things and more. Any selection of critical issues implies to adoption of a particular perspective. Ours derives from public policy. We are interested primarily in policies and policy mechanisms which will enable publicly financed institutions to perform well and to be seen to perform well. We have identified major issues that should be on the national agenda during the next fifteen years whatever the nature of the governments, agencies and institutions that formulate and implement the policies.

Today's children will inherit a world of high technology, and they will probably spend less of their lives in paid employment than any previous generation. While at work, however, they will need to be more efficient and more productive than ever before. In work and in leisure their well-being will depend on their knowledge, skills and creativity. Universities, polytechnics and colleges are not the only social institutions involved in producing and disseminating knowledge, developing skills and cultivating creativity, but their role is a crucial one.

For some years there has been no coherent policy for higher education. It is nearly twenty years since Robbins devised a strategy of expansion which worked well until a combination of stagnating demand from school-leavers for traditional courses, severe economic stringency and impending population decline undermined it. Robbins proposed, and for many years governments accepted, that demand from school-leavers who were qualified and willing to enter degree-level courses should largely determine the provision of places in higher education. The criterion, although still a valid starting point, no longer gives satisfactory policy guidance.

There will be substantial excess capacity by the early 1990s unless universities, polytechnics and colleges can adapt to new tasks and to the needs of new types of student. They must be capable of responding to academic developments and to fresh demands from society. They must be in the forefront of technology, both initiating and evaluating it. However little additional capacity will be created. New developments must come from adaptation, not expansion.

Much of the work of colleges, universities and polytechnics is intrinsically valuable but this does not preclude the need for some public accountability. Major industries have declined when demand has changed and enterprises have been unable to adapt. Response to changing demand need not be passive acceptance of external circumstances. Education is properly concerned with influencing public attitudes. Nevertheless, the case for public expenditure on higher education must be based on benefits for the nation. One of the main aims of this report is to suggest changes which would make more visible the contributions of higher education to the economy and to

society. Expenditure has to be restrained in an activity that must remain largely within the public sector and compete for resources with other social and education services. The strategy outlined in this report would encourage the development of a network of vigorous, efficient and cost-effective institutions, each excellent in its own range of activities, each imbued with a strong sense of academic purpose and responsive to the needs of a wider society. The main theme is an endorsement of diversity. This requires strong institutions and multiple criteria for policy formulation and resource allocation.

Aims of the strategy

- Our strategy has eight main aims:
- To provide opportunities for all who are able to benefit from some form of higher education and to encourage access from a broader social spectrum than at present;
 - To reduce undue specialization in secondary education and the initial years of higher education;
 - To create a framework within which the quality of teaching and research can be maintained, at a time when underlying demographic trends will make competition for resources difficult;
 - To stimulate research and other academic activities not directly linked to student numbers;
 - To encourage institutions to prepare realistic development plans;
 - To increase the capacity of universities, polytechnics and colleges to respond positively to changing academic, social and economic and industrial needs;
 - To promote efficiency in the use of resources;
 - To create a framework for policy and management studies that will help leaders of academic institutions meet the challenge of adaptation without growth.

Access

British students tend to be young and to be concentrated in full-time courses. Access to Higher Education shows how concentrated this provision remains, despite some welcome expansion of part-time and non-degree courses outside the universities. A central concern for the future is whether this pattern remains the best way of providing for a larger and more varied student population.

Robbins drew attention to marked differences in participation rates between different social groups and these remain. To this has been added since the time of Robbins the problem of apparently low participation by some ethnic minorities. The overall proportion of students who are women rose for several years but declined between the mid 1970s and the early 1980s. Considerable disparities persist in participation rates between different regions of the country. Such discrepancies should not be accepted as an inescapable feature of higher education. There should be renewed efforts to diagnose their causes and remedy any educational and social deficiencies of which they provide to be symptoms.

Course content and structure

The comments in this section apply particularly to the honours degree courses which are still dominant in the universities. A wide-ranging debate is needed about the content of undergraduate courses in the light of contemporary needs. One reason why we propose a radical reform of the structure of undergraduate education is to try to succeed where expansion policy, pursued by exhortation failed, and to break into the circle of excessive specialization in secondary and higher education.

The specialized honours degree has intrinsic merits. It is centred on the idea of an academic discipline: a coherent body of knowledge or range of subject matter that "holds together" and provides recognized methods of analysis. However, there are also

advantages in properly integrated degree schemes in which students are able to experience the methods of thought of several disciplinary perspectives. There is no reason why everything in an undergraduate curriculum should be taught in great depth. Breadth and the ability to integrate different ideas have intellectual as well as practical value. In the probable employment conditions of the 1980s and 1990s, very specialized first degrees are likely to be even less appropriate than they were in the 1960s.

Four of the SRHE/Leverhulme volumes make proposals for new patterns of initial courses of study, strongly emphasizing the need for flexibility. In recent months there has been increased public discussion of proposals for a partial course of two years of full-time study (or part-time equivalent) rather than the three or four-year full-time honours degree with forms the lynchpin of the present system.

Five main arguments can be put forward in support of less specialized two-year initial courses.

- (i) Shorter initial courses accompanied by genuine possibilities of credit transfer between institutions and variety of subsequent options would permit greater flexibility and give individual students more opportunity to tailor their higher education to meet their own particular needs and interests.
- (ii) Relatively short basic courses linking more than one disciplinary perspective but of good academic quality would help overcome the problem of early over-specialization and would be suited to the needs of many students and many employers in a system of mass higher education.
- (iii) Such courses could be widely available in a variety of institutions and would thus remove a serious obstacle to access, particularly for adults and working class students (especially girls), who do not have a strong tradition of leaving home to go to college.
- (iv) For some students the prospect of a two-year rather than a three-year commitment might be less daunting.
- (v) Courses could be provided at a lower average cost per student year if they were less specialized. There would be fewer uneconomic full-time honours degrees. In general, finance could be used more purposefully as an instrument encouraging response to changing circumstances. For example, the unit of resource per student could be higher for third and subsequent years of study to reflect higher costs of more specialized courses and to encourage the acceptance of transfer students. Furthermore, if means-tested mandatory grants were available for all students on the two-year initial courses but financial support to students for subsequent courses was based on other criteria, students would be encouraged to seek, and universities, polytechnics and colleges to provide, courses that could be completed within two years.

Three possible versions of two-year initial courses of study have been proposed: more intensive first degrees of the existing type, a new type of non-degree qualification in some institutions and a new type of initial degree in all institutions. *Agenda for Institutional Change* argues that honours degree standards could be met by lengthening the academic year which many outside higher education would see as a desirable reform in itself.

Staff research and study time could be protected through study leave arrangements. Such an approach would save little money if the provision for staff study leave resulted in periods of absence corresponding to existing vacations. More intensive use of buildings and equipment would be partly offset by their unavailability for activities such as conferences. Two-year intensive honours degree courses would make it difficult to reduce specialization in many subjects.

Another proposal is to treat two-year courses as an alternative qualification alongside the honours degree. This has been tried in the form of the Diploma of Higher Education but has little chance of success if traditional three and four-year honours degree courses supported by mandatory student grants continue to dominate provision in universities and polytechnics.

The third possibility is a different type of initial degree qualification in all institutions. One qualification, previously widespread, which has become much less common in England is the pass degree. A two-year pass degree could be the link which brings together several ideas under discussion for shorter, less specialized, more flexible, more widely available basic courses. Entry requirements could be broader than those required at present for admission to specialized honours courses. Pass degree courses might normally adopt a rather broad approach to a disciplinary area prepar-

ing the way for subsequent specialization; they should not, we stress, be a mish-mash of anything and everything. They could vary quite considerably in the extent or specialization and generalization. Some could be related to particular occupations.

A central issue in any consideration of a pattern of courses based on shorter periods of initial study is what opportunities they would open up to students. If three-year honours degrees were squeezed into two years, few changes would be needed in the pattern of postgraduate study. If two-year Diploma of Higher Education courses were expanded alongside existing three and four-year degrees, the key issue would be the terms on which students completing the diploma could transfer to full degree courses.

However, a two-year pass degree would require radical rethinking of both undergraduate curricula and the pattern of postgraduate studies. After obtaining a pass degree some students would finish their higher education, at least for a time. Others would proceed to a one-year honours course enabling them to go on to a higher degree. Another route could lead to one, two and three-year courses related to specific occupations.

In total, three layers of higher-level study should be built on to the basic two-year course. The first should be courses leading either to honours degrees or to occupation related postgraduate diplomas. After this, further one-year courses should lead to a variety of qualifications at master's level, either academic and research based, or linked to particular occupations. Finally, the third layer of postgraduate courses would lead to doctorates.

Research degrees and research training need special consideration. The traditional PhD is likely to come under increasing pressure to change. The structure of postgraduate courses outlined above could help meet this aim. A PhD graduate would normally have completed four distinct courses of higher education. Each of these stages would provide a qualification with intrinsic value as well as preparing for a higher-level qualification.

Present financial arrangements, discourage institutions from offering, and students from seeking, courses other than those leading to full-time honours degrees. In general, finance could be used more purposefully as an instrument encouraging response to changing circumstances. For example, the unit of resource per student could be higher for third and subsequent years of study to reflect higher costs of more specialized courses and to encourage the acceptance of transfer students. Furthermore, if means-tested mandatory grants were available for all students on the two-year initial courses but financial support to students for subsequent courses was based on other criteria, students would be encouraged to seek, and universities, polytechnics and colleges to provide, courses that could be completed within two years.

There needs to be financial support for students on higher-level courses. However, the criteria should be different. Five categories of support can be envisaged. The first would be scholarships for those who are exceptionally talented. The second would be grants in areas of special national or local need in which too few students of suitable quality were coming forward.

The third would be sponsorship of individual students by employers, including employers in the public sector. The fourth would consist of special grants to enable those suffering from long-term structural unemployment as a result of technological change to update their skills or acquire new ones. The fifth would be a government-backed loan scheme enabling students on higher-level courses to invest in their own future.

The issue of loans is thoroughly reviewed in *Resources and Their Allocation in Higher Education* which makes proposals for a mixed system of grants and loans. A general conclusion is that provided repayment arrangements are geared to realistic assessments of ability to pay, student support through loans is at least as equitable as the support through means-tested grants. The success of loan schemes in a number of countries suggests that administrative problems can be overcome.

Maintenance of academic quality

In a period of adaptation without growth there is a danger that quality could be compromised as institutions compete for students and resources. Prime responsibility for standards must rest with the higher education community. Nevertheless there is a legitimate external interest and the higher education community benefits when its quality is clearly visible.

In general, there are marked differences of practice between universities and other institutions. Polytechnics and colleges are subject to a network of outside influences and controls from the CNAA, BTEC, the Regional Advisory Councils, the local authorities and HMI, while universities respond only to those external voices they choose to heed. During the course of our study two broad views emerged. One was that the non-university institutions should have less external intervention in their academic affairs; the other was that universities should have more.

There is certainly a case for some convergence of practice. Most polytechnics and colleges of higher education are now mature institutions with experienced senior staff. On the other hand, along with universities they may in the future find themselves under pressure to compromise academic quality in attempting to maintain student numbers or earn income from other sources. We believe that the universities should establish an academic review body with these broad functions and that this body should collaborate with the CNAA, with the possibility that in due course the two bodies might combine.

The academic profession

The efficiency and enthusiasm of members of the academic profession must be maintained during a long period of adaptation without growth. Effective professional development policies and open styles of management can help to maintain morale; but it is necessary to ensure that some well-qualified graduates are regularly appointed to academic posts; that all members of universities, polytechnics and colleges are able to contribute usefully to the work of their institutions; that those who occupy positions of responsibility retain their capacity to shoulder their responsibilities; and that there is some mobility of staff, and that students have opportunities to benefit from the expertise of people with recent experience outside higher education.

In the contraction of recent years, many members of staff have taken early retirement. Early retirement schemes will continue to be needed. However, reduction of the average length of working life through long-term early retirement has major implications for pension schemes. At the other end of the scale it is undesirable to subject very able young graduates to excessively long periods on temporary contracts.

In universities, the issue of lifetime tenure cannot be avoided. It is unfortunate that this issue has come to the forefront of political debate at a time of severe financial stringency because the issues involved are not primarily financial. There is a strong case for treating university teachers like their research and public sector colleagues and protecting their rights through employment protection legislation (which did not exist until relatively recently) rather than seeking to maintain lifetime tenure as the standard form of university teaching appointments.

It is difficult to determine how well an academic is carrying out his teaching activities except in cases of serious dereliction of responsibility. Management procedures are needed to help encourage good academic practice. In many areas of professional employment there are now annual appraisals of performance, and such reviews could usefully be introduced in higher education. The widespread extension of arrangements for fixed terms of appointment for senior positions of responsibility is desirable. Appointments could be renewable but open to

from the chairmen's final report

competition when an individual's term of office ends.

A growing number of academics have worked in only one institution. In general, universities, polytechnics and colleges are invigorated by a regular infusion of ideas and experience from elsewhere. When new recruitment is low, this can be achieved only through secondment and staff exchanges. National schemes are needed whereby academics can change places with colleagues in other institutions or areas of employment. The position of part-time members of staff needs protection, especially at a time when limited budgets make them particularly vulnerable.

In the past a period of full-time academic research has often preceded appointment as a permanent member of the teaching staff of a university or other institution. Arrangements are needed which will provide suitable long-term careers for able research workers even if no appropriate teaching posts happen to be available. Research councils should fund a significant number of senior appointments in areas where research is needed but where student demand for courses does not justify a sufficient number of new teaching posts.

Research

Institutions of higher education contribute directly to the national capacity for fundamental and applied research and train the next generation of researchers. In doing so they contribute to the solution of social and economic problems and help in the attainment of other cultural objectives. There are doubts whether these functions are as present being performed as well as they ought to be. A central theme of *The Future of Research* is agnostic. The book draws the conclusion that a clearer conceptual separation of the teaching and research functions would help to protect research. It recommends that university funding should distinguish between undergraduate teaching and general support of scholarship on one hand and postgraduate teaching and research on the other.

A corollary is that any institution where research is seen as a significant activity would need to have a research policy determining the balance of its effort between subject areas, between research and research training and between different forms of applied and pure research. Agnosticism about the direct links between undergraduate teaching and research leads to the conclusion that different institutions will have a different balance of teaching and research, and that there must inevitably be some concentration of effort. *The Future of Research* endorses the concept of polytechnics having a special role in applied research and recommends that each polytechnic should have an explicit research policy.

The issue of research and research training in the arts and humanities is raised in *The Future of Research* and in *The Arts and Higher Education*. The main policy issue is whether there is need for a separate research council for the arts and humanities. Both reports are cautiously sympathetic to the idea. The implications of setting up such a council should be studied by the Department of Education and Science and other interested bodies such as the British Academy and the Arts Council.

The binary system

A variety of learning opportunities might be provided by a few large comprehensive universities each covering a wide range of activities and a large catchment area, or by a wider geographical spread of smaller and more differentiated establishments. While the extremes of huge, all-purpose institutions and very specialized monotechnic institutions can easily be rejected, an important strategic choice is whether there should be a move in either direction. On balance, the need to maintain quality and to broaden access in a period of intense competi-

tion for resources points in the direction of institutional differentiation. Any consideration of institutional differentiation must take account of the binary system.

These administrative differences do not correspond to equally sharp differences in academic outcomes. Does the overlap of academic functions suggest that the binary system should be abandoned? The binary system involves three distinct differences between sectors: legal and administrative status, mechanisms of finance and methods of academic regulation. It is not clear that the differences in legal status need correspond to the other two distinctions. Similar activities can be performed by institutions with different administrative arrangements. We have suggested that universities should establish some form of organized external academic review in teaching as well as research. This need not damage their status as universities. Conversely there is a good case for appropriate funding to enable at least some polytechnics to develop a significant research capacity.

More positively, the binary distinction provides what is described in the report *Structure and Governance* as a "moralising metaphor". The existence of one segment of higher education pulled in the direction of research and scholarship and another pulled in the direction of local and regional social and industrial needs does help to remind members of all academic institutions of the essential diversity of higher education.

It would certainly be regrettable if the existence of the binary system hampered cooperation between institutions. However, the extent of cooperation between institutions within either sector is sufficiently limited to cast doubt on whether it is the distinction between universities and other institutions which inhibits the sharing of resources. No doubt the blurring of the binary line will continue.

The role of government

Central government needs a higher education policy both because of the key role of universities, colleges and polytechnics in the national systems of research, education and training, and because it provides most of the finance. Cash limits not influenced by criteria of educational or social need do not amount to a higher education policy. Government should have explicit policies with respect to the scale of provision in areas of particular public concern and those which make heavy demands on resources.

There need to be intermediary organizations to advise on the allocation of funds according to the broad policy objectives of government while inhibiting direct political involvement in academic affairs. At present the main bodies are the University Grants Committee, the National Advisory Body for Local Authority Higher Education, various denominational bodies concerned with the voluntary colleges and the research councils.

The local authority role in England and Wales is considerable and provides an important administrative link between higher education and the rest of the education service. Numerous reports on higher education during the past twenty years have taken the view that while individual maintaining authorities should retain overall responsibility for the good management of institutions under their control, major higher education institutions should have the maximum possible freedom to manage their own affairs. Local authorities need to retain enough residual powers to discharge their legal and financial responsibilities but otherwise they can best involve themselves in the running of institutions through membership of governing bodies.

It is sometimes claimed that some or all of the polytechnics should be taken out of local authority control altogether on the grounds that they are major higher education institutions which have more in common with the public sector. In our view forms of government and mechanisms of finance need not determine academic

standing or levels of resources, and the cause of diversity is likely to be best served by a variety of forms of academic government.

The National Advisory Body for Local Authority Higher Education was established in England in 1982 for an initial period of three years. These arrangements have the effect of bringing resource allocation in the local authority sector under a substantial measure of central influence. They provide machinery which will begin to make it possible to devise coherent policies for higher education between universities and the public sector.

Colleges run by voluntary bodies and the other institutions which receive a direct grant from the DES remain outside the direct influence of the NAB. We note that discussions are under way which may lead to them coming within the sphere of influence of the National Advisory Body. This would help ensure similar treatment of institutions performing similar functions and seems a sensible aim.

The Structure and Governance of Higher Education discusses the possibility of merging the UGC and the NAB into a single funding body. This remains a long term option, but there are significant differences in the constitutions of the two bodies and of the institutions for which they are responsible. The NAB is recently established and needs time to establish its influence within the local authority sector. Meanwhile the NAB and the UGC should continue the collaboration already started to eliminate obvious anomalies in resource allocation between the main types of courses and subject areas and between geographic regions. It is most important for the UGC and NAB to agree common funding criteria for the many activities that are common to the two sectors than to confront prematurely the difficulties involved in a merger.

Research Councils funding assumes that research projects in universities will be able to make use of basic facilities and staff financed through the UGC grant. However, the UGC block grant makes no explicit distinction between research and teaching components. The unmarked research funding received by universities is one of the main sources of the sense of injustice felt by many public sector institutions. Separate identification of research and teaching budgets would protect research and help to bring about a sharper focus of the national research effort. It would also enable the true costs of different institutions to be seen more clearly.

Like research, continuing education can be funded as an adjunct of the general funding of institutions; it can be funded through a special agency, or it can be funded through the purchase of courses by individuals, firms and government departments. The present arrangement has a specialized funding agency; it is provided either out of the general budgets of institutions and local authorities or on a full-cost basis to students or sponsors of students. As far as higher education is concerned, the issue is whether present funding mechanisms involving the NAB and the UGC will be adequate to meet the needs for higher levels of continuing education without a special agency having responsibility for initiatives outside the normal pattern of course provision.

The fourth source of funds reflects directly the interests of employers and users of research. Income can be earned from full-cost courses and from research, development and consultancy for industrial and commercial enterprises and central and local government. Income can also be earned from the hire of facilities such as buildings, sports amenities and computing facilities. The key element in these proposals is the notion of core funding, guaranteed for long periods but needing to be supplemented to a significant extent from other, less secure sources.

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The institutions

Any external intervention between student and teacher, or between scholar and scholarship needs to be justified. We have proposed that one possible justification is the maintenance of standards. Another is the efficient use of public funds in the light of legitimately established national priorities.

Institutions should have a central role in any strategy for the future of higher education but there must be some coordination of their separate efforts. Each university, polytechnic and college should have an academic development plan recognized by its main funding body as being consistent with broad national and regional policies.

Any mechanism of institutional finance is a compromise. There is a

compromise between the claims of academic freedom and the claims of elected governments to establish priorities. There is a compromise between the desire of institutions for guaranteed funds to enable them to plan rationally and the wish of external funding bodies to use financial incentives. A balance between the pressures can best be achieved, and the independence of institutions safeguarded, if they receive their income explicitly through several different routes.

Each institution whose primary activity is higher education should be entitled to receive core funding in the form of a general grant through the appropriate funding body in accordance with its agreed development plan. We consider that over the system as a whole sufficient recognition would be given to the claims of academic autonomy if institutions received on average about half their income in the form of long term guaranteed core funding.

A second component of institutional income should be the full-cost funding of specific teaching and research programmes and projects. Funding agencies should earmark funds for designated programme areas and institutions involved in the provision of higher education should be entitled to bid for them.

Local authorities should be able to make programme grants to both public sector institutions and universities. Some provision for locally-based programme funding could be made in the block rate support grant. Some funding bodies, for example the research councils, would probably adopt primarily the programme funding mode, while the UGC would probably allocate a relatively small part of its total funds in this way. However, it is desirable that the UGC set aside a significant part of its funds for special programmes. Given the greater variety of provision in the public sector and its greater need to respond quickly to local needs, the NAB and its Welsh and possibly Scottish counterparts would probably reserve larger shares of their allocations to the programme funding mode.

The third constituent of the income of institutions should reflect the priorities of student customers. There remains a good case for student choice influencing but not dominating the orientation of higher education institutions. Individual universities, colleges and polytechnics should be entitled to retain fee income. We assume that home student fees would continue to be subsidized out of public funds.

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Improving academic leadership

Both an awareness of the policy environment and professional management skills will be needed by academic staff who aspire to a significant role in running their institutions. Neither are systematically available across the whole of British higher education at present. A centre for higher education management and policy studies should be established with the twin tasks of promoting the study of emergent policy issues and of providing facilities for the professional development of leading members of universities, polytechnics and colleges. The centre need not be a large staff college, and it might be linked to an existing institution. We would prefer to see an independent centre possibly linked to an institution not directly concerned with higher education. Its income should come from both sides of the binary line or, which would be preferable in the first instance, take the form of a direct grant from the DES.

Those who signed . .

The report is signed by the chairmen of the eight Leverhulme seminars:

Sir KENNETH BERRILL, chairman of Vickers de Costa and former chairman of the University Grants Committee (chairman of the resources seminar)

Mr CHRISTOPHER BALL, Warden of Keble College, Oxford and chairman of the board of the National Advisory Body for Local Authority Higher Education (chairman of the arts and higher education seminar)

Sir ADRIAN CADBURY, chairman of Cadbury-Schweppes (chairman of the access seminar)

Sir MICHAEL CLAPHAM, former chairman of Imperial Metal Industries, and of the Council for National Academic Awards (chairman of the labour market seminar)

Lord CROWTHER HUNT, Rector of Exeter College, Oxford, and former Minister of State at the Department of Education and Science (chairman of the structure and governance seminar)

Mr KENNETH DURHAM, chairman of Unilever (chairman of the research seminar)

Sir ALISTAIR PILKINGTON, director of Pilkington Brothers (chairman of the institutional change seminar)

Sir BRUCE WILLIAMS, director of the Technical Change Centre and former vice chancellor of the University of Sydney (chairman of the teaching seminar)

. . one who disagreed

Sir Bruce disagreed with the other chairmen on some important issues. Extracts from his note of dissent are given below:

This note of dissent is the result of differences from my colleagues on three issues. My disagreement starts with the analysis and recommendations on the content and structure of courses. I agree with the judgment that secondary education is to be specialized and that there is an overemphasis on single-subject honours degrees. But I do not agree that the general introduction of less specialized two-year initial courses would provide a satisfactory solution. Nor do I accept the suggestion of restricting means-tested mandatory grants for all students to these two-year initial courses, to encourage students to seek, and universities, polytechnics and colleges to provide, courses that could be completed within two years.

In my view, the case for a multi-sector system is much stronger than implied in the section on the binary policy. The nearest to an exposition of the philosophy of differentiation are the statements that the binary system provides a "moralising metaphor" and a mechanism whereby different aspects of higher education can be emphasized. There has been a tendency to criticize the binary system on the ground that it is divisive, but far too little attention has been given to the need for institutional differences.

It is stated that there must be some coordination of the separate efforts of individual institutions and to make this possible each institution must agree with its main funding body a development plan to take account of the whole range of its activities. I do not believe that the UGC could effectively coordinate the activities of the relatively small number of universities in this way, and if it attempted to do so it would restrict variety and obstruct the development of new ideas. The problems of coordination arise rapidly with scale, and in the public sector the much larger number of institutions would create even greater problems and dangers of bureaucratic blight.

A lot of research for a little money



by Peter Scott

The Leverhulme programme of study into the future of higher education may not be able to compete in quantity with the shelves of blue-and-white-covered books produced by the Carnegie commission on higher education during the 1960s and early 1970s. But that was another country and another time. By the more modest standards of Britain and in the more austere times of the early 1980s the Leverhulme programme's productivity is impressive enough: eight seminars that generated nine monographs which contained more than 70 papers taking up 1,800 pages of text and a final monograph and final report published today.

Certainly the comparatively modest grant made by the Leverhulme Trust to the Society for Research into Higher Education, supplemented by subsidies to individual seminars from the Department of Education and Science ("Resources and their allocation" inevitably) and the Cusack Foundation ("The arts and higher education"), has been made to go a long way. The programme has been a model of high research productivity that must put some other more lavishly-funded projects to shame. Most of the credit has to go to Professor Gareth Williams, the programme director and the organizing and intellectual force behind Leverhulme, although the programme's deputy director, Professor Tessa Blackstone and the convenors of the separate seminars played an important part. If nothing else, Leverhulme has been an example of how to get a lot done with a little money. The Department of Education and Science should at least take notice of that.

But if Leverhulme could never hope to compete with Carnegie in quantity, its quality can be compared. The Carnegie commission of course did have the money to commission some substantial research of its own while Leverhulme was forced to adopt a more secondary, even parasitical, role. But the original research for Carnegie was often disappointing, amounting in most cases to the massive reinforcement of conventional analyses and accepted interpretations. By and large it was neither (concomitant, in the sense that it obliged those in American higher education to revise previous conclusions, nor radical, in the sense that it opened up exciting new perspectives. Much of the Carnegie research was all too typical of the mass production of American social science in the 1960s, in contrast to the more qualitative and theoretical styles more popular today. So Leverhulme started with less of a scholarly disadvantage than might be supposed.

It may be misleading to prolong this comparison between the work of the Leverhulme programme and the Carnegie commission. Although it remains the nearest convenient point of shorthand reference, the two enterprises were as different as the two systems of higher education they tried to describe and guide. This makes it even more remarkable that their intellectual weights should be so broadly equivalent. Neither produced papers or books of startling intellectual originality that transcended their boundaries. Both produced valuable and thorough state-of-the-art analyses of the issues that preoccupied American higher education in the 1960s and British higher education in the 1980s. Both therefore modestly but usefully rationalized the terms of contemporary debate.

One temptation, that should perhaps be only half resisted, is to rank the nine Leverhulme monographs in terms of the status and importance attached generally in higher education

Higher Education and the Labour Market
edited by Robert Lindley
SRHE Monograph 43, £4.95 plus 45p
ISBN 0 900868 33 X
Access to Higher Education
edited by Oliver Fulton
SRHE Monograph 44, £4.95 plus 45p
ISBN 0 900868 84 8
Agenda for Institutional Change in Higher Education
edited by Leslie Wagner
SRHE Monograph 45, £6.60
ISBN 0 900868 85 6

The Future of Research
edited by Geoffrey Oldham
SRHE Monograph 47, £6.60
ISBN 0 900868 86 4
The Arts and Higher Education
edited by Ken Robinson
SRHE Monograph 48, £4.95
ISBN 0 900868 89 9
Professionalism and Flexibility for Learning
edited by Donald Bligh
SRHE Monograph 49, £6.90
ISBN 0 900868 87 2

Accountability or Freedom for Teachers?
edited by Donald Bligh
SRHE Monograph 50, £6.90
ISBN 0 900868 88 0
Resources and Higher Education
edited by Alfred Morris and John Sizer
SRHE Monograph 51, £7.35
ISBN 0 900868 90 2
The Structure and Governance of Higher Education
edited by Michael Shattock
SRHE Monograph 52, £7.35
ISBN 0 900868 91 0

to the subjects they covered. According to this mischievous model the higher the status of the subject the better the quality of the corresponding monograph. It works – up to a point. The monographs on *Research* (4) and *Resources* (8) are perhaps the strongest of the bunch. Those on *The Labour Market* (1) and *Structure and Governance* (9) are also good, although liveliness may have to compensate for an occasional lack of coherence.

So are the monographs on *Access* (2) and *Agenda for Institutional Change* (3), although there is perhaps a suggestion that in the austere and entrepreneurial 1980s the former is a declining cut of the latter's rising top. A social conscience may be less important than strong management for higher education today. The *Arts* monograph (5) is a curious mixture of waffly sentiment, anthropological and "Spurist" insights of varying relevance and rather hard-nosed analyses of current issues in art and design education that suggest conservative, and so controversial, solutions. But as the only monograph that touches directly on the content of higher education in the Leverhulme series, it stands alone. The two monographs on *Teaching* (6 and 7) are perhaps the weakest of the nine – which is just what the cynics would suppose. Research at the top, teaching at the bottom, higher education's hierarchy of values perfectly reflected.

However it is not entirely fair to compare monographs in this way, when each is a collection of individual papers. Although these collections follow a common pattern, from the theoretical or the general to the practical and particular, none of them makes up a satisfactorily coherent whole. The advantage which the monographs on *Research* and *Resources* have over the others is not that individually the papers that make them up are of higher quality but that they seem to relate to each other better in a sensible progression. They provide coherence, if not comprehensive, treatments of the topics they cover.

The lack of coherence in some of the other monographs on the other hand has very little to do with the quality of their individual papers, which is often as high or higher than that of the papers in the most successful monographs. In *Agenda for Institutional Change* there are two first-rate papers. Sizer and Kogan and Boys. In the last monograph, on *Structure and Governance*, Clark and Berdahl have written penetrating papers on the interplay between external structures and internal values and on the intermediate institutions like the University Grants Committee where the territories of the state and of higher education meet. Nor is the problem a failure of organization by the convenor/editors of each monograph. Fulton's introduction to the *Access* monograph is a model. The same compliment can also be paid to Wagner on *Institutional Change* and Shattock on *Structure and Governance*.

The difficulty lies elsewhere than the quality of the individual papers or the organizing skill of the editors. It has two main causes. The first is simply that some areas of higher education policy have a natural and historical coherence that is denied to others. *Research*, for instance, could rely on a comprehensive field with clearly articulated issues of concern and strong institutions that form an equally clear framework in which these issues can be explored. *Resources*, particularly during a period when they are being rationed, have a coherence born of necessity. The same cannot be said of teaching, nor despite the irrepressible attractions of manpower planning to politicians of *The Labour Market*.

The second cause is that the monographs have grown out of eight special-

ist seminars and the boundaries between them were arbitrary and unclear. Although most of the important policy issues in higher education are eventually covered, some are covered unsatisfactorily because they are lumped together in incoherent groups. Inevitably there is overlap: what is the distinction between *Structure and Governance* (which are themselves not adequately distinguished by the neglect of the latter) and *Agenda for Institutional Change*? Both seminars and so their monographs have suffered from this lack of definition. There are also gaps: the most obvious is the organization of undergraduate education, a subject to which the Robbins committee devoted a lot of attention and is a lively issue today with the renewed interest in two-year courses, but which is subordinated to teaching and assessment in monographs 6 and 7.

This second cause of incoherence may help to explain the strange case of the disappearing Council for National Academic Awards. By common consent the CNAA is a powerful institution; some say an imperialist one. It has decisively reshaped higher education outside the universities. In the future, because of the growing emphasis on quality as a guide to development (and decline?), the role of the CNAA is unlikely to diminish. How does it appear in these monographs? A walk-over in *Access*, a few lines (rather unconvincing) in *Institutional Change*, surprising neglect in the two *Teaching* monographs, brief criticism in *Resources*, and a full (but still critical) paper in *Structure and Governance*. In other words the CNAA is effectively ignored, except as a bureaucracy with a larger or smaller place in the superstructure of higher education.

There are other omissions almost as remarkable. Local authorities appear almost exclusively in the role of defendants (guilty until proved innocent). There is a strong bias towards the universities among most of the authors of papers. Those parts of non-university higher education outside the polytechnics are almost invisible. So too is teacher education, which may be another way of saying the same thing. Adult and continuing education is stuck firmly in a liberal education mould and so stars in *Access* and the teaching monographs but does not appear at all in the *Labour Market* and hardly at all in *Institutional Change*, *Resources*, and *Structure and Governance*.

Inevitably the quality of the individual papers in these monographs is uneven. The Leverhulme programme cannot be compared to a conventional research project; it is intended as an exercise in policy analysis and more specifically policy formation. It brings together not only people from both sides of the binary boundary, a rare enough event in British higher education, but also academics, administrators, politicians. The pattern of each monograph is broadly similar. The first papers are more "academic" and try to establish some kind of theoretical framework to guide further discussion of the subject under consideration. It may be a comment on the state of research into higher education in Britain that so many of the papers are written by Americans. Clark (twice), Trow, and Berdahl.

Certainly it suggests that mainstream social scientists in Britain treat clear of higher education. Papers by people by A. H. Halsey or Margaret Archer, which derived their theoretical preoccupations from the experience of British higher education, might have acted as a better bridge into the more practical and policy-oriented papers that follow. The gap between theory and practice is wide enough in the study of higher education. But in

considerations acceptable. The reflective and analytical preoccupations of the academic may need to be balanced by the more engaged and descriptively down-to-earth preoccupations of the practitioner. The academic paper may need to be qualified by the civil servant's minute.

The nine monographs can hardly be criticized for not covering issues and subjects which they were not intended to cover. But the Leverhulme programme as a whole can be criticized for leaving important gaps. Two deserve to be mentioned. First, with the exception of the *Arts* monograph there is very little about the content of higher education. Yet as Clark argues in his paper for *Structure and Governance* the administrative forms of higher education are deeply influenced by the shifting frontiers and alliances between disciplines of knowledge.

Secondly and more generally, there is almost nothing in any of the Leverhulme monographs about the values, cultural as well as intellectual, of higher education. The Carnegie reports and books devoted a lot of attention to values, although America's more rhetorical public culture and more extensive (and so less academic) system of higher education have to be taken into account. The only direct contribution in the Leverhulme series is a short paper by Warnock in the first of the teaching monographs.

However, it would be quite unfair to end on a critical note. Policy analysis is not a suitable intellectual form to uncover the underlying mechanism of an intellectual, or any other, system. It is about the lights, indicators, steering, and brakes not about the engine. Leverhulme could not be expected to fill the vacuum in higher education research and scholarship. Nor could it be expected to go far beyond what people in higher education regard as likely or acceptable. Within these inevitable limits the programme has been a success and the monographs it has produced deserve to be much more widely read than they have been apparently up to now.

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BOOKS

Unifying mechanics

The Physics of Vibration
Volume two: the simple vibrator in quantum mechanics
by A. B. Pippard
Cambridge University Press, £20.00
ISBN 0 521 24623 7

Volume one of Professor Pippard's unusual monograph (reviewed in *THE* of January 4, 1980) dealt with problems involving one degree of freedom and emphasized the underlying unity of all linear problems. A valuable unifying concept – that is, the response of our system to a very short disturbance suddenly applied.

If the system is linear (that is, if the response is always proportional to the applied impulse), we can analyse any stimulus into a sum of applied impulses and compute the response by addition. If the system is not linear, the mathematics and physics become much more complicated but can still be kept under control – numerical and graphic treatments being possible if analytic methods fail. A typical non-linear system is one with "feedback" (that is, one in which some of the input depends on the response). Such a system may be capable of sustained oscillation even in the absence of any external stimulus.

Why a second volume on what is only a part of mechanics? First, because honours courses always include thorough reviews of their basic fields, starting *ab initio*; and second, because the main mathematical process involved, the calculation of the possible frequencies of vibration of a physical system, occurs in many fields of physics besides mechanics – for example, in electromagnetics, acoustics, hydrodynamics and quantum mechanics. The same mathematical results turn up again and again in different physical contexts. Calculating the response of a mechanical system and of an electrical circuit to a periodically applied stimulus can involve the solution of exactly the same differential equation.

Volume two begins with chapter 13, which introduces the treatment of the simple harmonic oscillator according to quantum mechanics rather than classical mechanics. In the limiting case of very low characteristic frequencies any system can be safely treated by classical mechanics. Throughout, Pippard emphasizes the value of the Bohr correspondence principle, which states that although it is strictly speaking necessary to solve Schrödinger's quantum-mechanical equation in order to understand any system properly, a great deal of information can be obtained by looking at cases with low characteristic frequencies. Since the differential equations of classical mechanics are always much simpler to deal with than the equations of quantum mechanics, this is an extremely important consideration. Indeed, various "semi-classical" treatments have been devised over the years to deal with problems too difficult for exact quantum-mechanical treatment; some of these methods are described. They improve on the crude correspondence principle and are found to be reliable in a large number of cases. In chapter 14 such methods are applied, to great effect, to various cases of the non-linear oscillator.

In chapter 15, Pippard first broaches the subject of systems with more than one degree of freedom. Simple examples are oscillators capable of motion in different directions in space, and the motion of electrons in a field. Magnetic fields introduce many complications because magnetic forces do not always obey Newton's third law that action and reaction are equal and opposite, but the appropriate modifications of the equations of motion are fortunately known in both classical and quantum mechanics, enabling us to build up a theory of the motion of charged particles in a prescribed electromagnetic field, often referred to as "orbit theory".

The main business of the book is in chapters 16 to 21 which deal, to some extent, with the observation of and with irreversible effects in general. For an understanding of the maser (an extremely stable low-noise amplifier or

oscillator operating by the interaction of photons and molecules), quantum mechanics is indispensable. Any oscillator can occupy a large number of different "energy levels" and can jump from one to another with the emission or absorption of "quanta" (finite lumps) of radiation of the appropriate energy. (If this energy is high enough, the radiation becomes visible light and we have a "laser".) A jump can occur spontaneously or can be stimulated by a quantum of the appropriate energy emitted by a neighbouring oscillator. This phenomenon of "stimulated emission" implies the maser as a theoretical possibility, provided that we can prepare an assembly of atoms or oscillators with a majority in a high-energy state. If we can, a single quantum could "touch off" the whole assembly so that all the atoms emit practically simultaneously and in the same phase. Some "trick" is necessary for this provocation (more heating of the assembly will not do) and several such tricks are described in chapter 21.

The discussion of irreversible effects such as conduction and diffusion is a very difficult problem, since the equations of both classical and quantum mechanics are unchanged if we reverse the sign of the time-variable. We have to look at the limiting case of a large assembly and we here confine ourselves to saying that stimulated emission is also crucial. Einstein showed in 1916 that, if we take it into account, a satisfying derivation can be given of Planck's famous law of the energy of a constant-temperature assembly. The book contains a very interesting discussion of these matters at several different intellectual levels, but the last word on irreversible processes generally has still to be said.

The book is superbly printed and produced and very readable. Anyone who has met the author will recognize the racy, argumentative style and the love of the apparent paradox. Virtually every mathematician, physicist, engineer or philosopher who has done courses on elementary quantum mechanics and electromagnetics will find something of interest in it. No difficult mathematics is introduced but there are thought-provoking comments on almost every page. There is no book quite like it.

H. N. V. Temperley

H. N. V. Temperley was formerly professor of applied mathematics at the University College of Swansea.

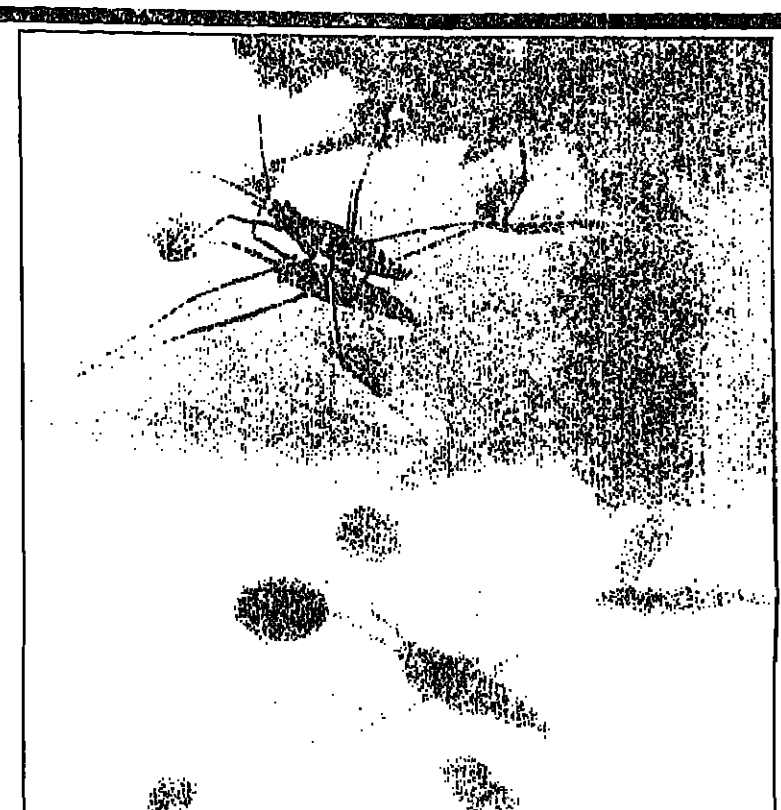
Basic Moore

Basic Physical Chemistry
by Walter J. Moore
Prentice-Hall, £28.00 and £10.95
ISBN 0 13 066019 1 and 057703 0

Nearly everyone currently teaching physical chemistry in British universities will have one or more editions of W. J. Moore's *Physical Chemistry* on their bookshelves, and most will have used it as a text in their own undergraduate days. Over the years, the book has grown as attempts have been made in successive editions to include at least some modern advances in the coverage of the main areas of the subject. In comparison with the fifth edition of the author's standard text, this new book offers a somewhat shorter text, a more appealing format, and some attractive reorganization of material.

The growth in university texts on physical chemistry illustrates a difficulty with which teachers in the subject must struggle. The basics of the subject – states of matter, thermodynamics, quantum mechanics, statistical mechanics and reaction kinetics – remain as important as they ever were. However, much of what has to be taught is not new. How then does one leave sufficient time to show undergraduates some of the excitement of modern research in the subject?

Nowhere is this difficulty more apparent than in respect to thermodynamics. Usually, the subject is approached classically through the laws of thermodynamics, which are based, in turn, on the observation of bulk behaviour. The molecular nature of matter, which is central to the study of modern chemistry, is of no consequence. This factor, combined



The surface of a pool of water indented by the weight of a water skipper, the refracted light on the bottom of the water indicating the points where the legs touch the surface. Taken from *How Life Learned to Live: adaptation in nature* by Helmut Tributsch, published by MIT Press at £18.00

with others, makes it hard to excite the majority of chemistry students, and this problem has been recognized in Professor Moore's new book. As a result, five chapters introducing the concepts of molecular energy levels and the distribution laws precede the presentation and development of thermodynamics; and the description of molecular heat capacities forms a vital bridge between the molecular and macroscopic properties.

Although the early treatment of energy levels and distribution laws is incomplete and not entirely rigorous, it is supplemented in later chapters – I find this approach appealing. As is stated in the preface, students are likely to follow thermodynamics more easily – and, I would think, with more enthusiasm – if they understand what is happening at the molecular level. In addition, the whole of the text is attractively presented and written with Professor Moore's usual clarity.

Despite being abridged, I cannot take seriously the claim that the "length of the book is suitable for a typical one-year course". It will, however, serve very well as the basis for at least the first two years of university work in physical chemistry. It should also be very useful for those students who, although their main interest is in disciplines other than chemistry, still need a physical chemistry textbook.

Ian Smith

Ian Smith is a lecturer in physical chemistry at the University of Cambridge.

Differential topology

Introduction to Differential Topology
by Th. Bröcker and K. Janich
Cambridge University Press,
£15.00 and £5.95
ISBN 0 521 24135 9 and 28470 8

In the late 1950s a number of topologists, spurred on perhaps by René Thom's work in geometric topology, moved into the differentiable category and lent cohesion to the newly-emerging subject of differential topology. Quite apart from its intrinsic interest one can view the beginnings of the subject as pretty well the basic common ground of several areas of mathematics, notably dynamical systems, Riemannian geometry, global analysis and the rapidly developing theory of singularities.

During its formative years differential topology acquired (by great good fortune) a most able practitioner and expositor, John Milnor, whose brilliant series of notes and monographs still provide a firm

foundation and a source of inspiration to all who write in this area. It is against this background that the present text (a translation of the German edition of 1973) has to be judged, representing one of several introductions which have made their appearance since the mid-1960s.

Without question the authors have achieved their primary objective of writing a clear set of notes on differential topology presupposing little more than undergraduate mathematics, and covering the really essential topics. The opening chapters follow a predictable pattern with vector bundles, modelled by the tangent and normal bundles, as the goal. Here already one detects an unevenness in the emphasis on ideas: tangent vectors receive an exemplary treatment, but the role of the differential as the best linear approximation at a point is not even mentioned.

The logical order of the book is somewhat upset, about a third of the way through, by a discussion of calculus which belongs properly to an introductory chapter. It is also at this point that the notion of transversality first creeps in. One of the disappointments of the book is its scant treatment of this topic, which one now sees as one of the keystones of singularity theory. Quite properly, Sard's theorem provides the next step in the development. At this juncture it would have been natural to prove a (sufficiently useful) transversality theorem and exemplify it by Whitney's result about immersions. In the event the authors proceed directly to the Whitney result, the technicalities of the proof tending to obscure the simple underlying idea. Transversality then modestly retires behind the scenes not to re-appear until the closing chapter in the guise of a result about sections of vector bundles.

The remaining half of the book is aimed more at geometric topology. The starting point is the integration of vector fields; and here the authors deserve full credit for including the rather neglected Ehresmann fibration theorem as a nice application of this set of ideas. From here it is but a small step to the isotopy embedding theorem and a discussion of connected sums along the lines of Milnor's notes. The text now returns to basics by presenting an excellent short account of sprays, providing the shortest path to exponential maps and the tubular neighbourhood theorem. We have now reached the penultimate chapter where the bits are assembled to produce the bordism algebra, and a statement of Thom's theorem on its structure.

At the very least this text bears comparison with any of the more recent introductions to differential topology. Perhaps the writing is a little too systematic to endear the book to a student, with rather more emphasis on proving basic theorems than reaching attractive applications. All too often I felt that space devoted to technicalities might have

been better used to enliven the text, possibly by the inclusion of simple examples to illustrate and reinforce the theory. These, however, are relatively minor criticisms of a book which I think by common consent will be considered a very worthwhile addition to the literature on differential topology.

C. G. Gibson

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Algal ecology

Algal Biology: a physiological approach
by W. M. Darley
Blackwell Scientific, £7.80
ISBN 0 632 00608 0

Dr Darley's book is the most modest of a recent batch attempting to end a long-standing dearth of texts on algal ecology. It is a short, simple account aimed at the undergraduate market. A wide range of algae are discussed according to their habitat: even the less-studied algal communities found in snow, soil and hot springs are considered. However, neither riverine nor estuarine algae are mentioned. Understandably, most of the work described originates from laboratory studies, although Dr Darley does not lose sight of the problems confronting algae in their natural habitats.

The general balance is good. Roughly similar space is allocated to planktonic and benthic forms, and symbiotic algae have a chapter to themselves. There are also brief mentions of the characteristics of the diverse plants included in the algae, general ecological concepts, and the relationship between algae and man. Methodology also receives some attention in the text as well as in a short appendix.

Although the book covers quite a bit of ground in only 168 pages, the price to be paid is that few topics are discussed in depth or at length (plankton blooms and translocation in seaweeds merit only half a page each). The author's style is of necessity direct and succinct. Although the text is invariably clear, it verges on the telegraphic at times. Inevitably in such a condensed text, complex matters are oversimplified.

Quite reasonably in a basic text, the few references cited are post-1970 and by leaders in the field. Unfortunately, although many quite fundamental issues have to be taken on trust, references are sometimes cited to substantiate quite trivial facts, such as "freshwater red algae are confined to flowing water". The only reference quoted in the entire section dealing with the Charales merely confirms that they can form large populations in alkaline waters.

This book is a basic, straightforward text which, although it contains little to stimulate a postgraduate student, may suffice the needs of an undergraduate studying aquatic biology. Unfortunately, for most potential readers it tends to say too little to be really useful.

Trevor Norton

Trevor Norton is senior lecturer in botany at the University of Glasgow.

A comprehensive collection of reviews on *The Growth and Functioning of Leaves* has been edited by J. E. Dale and F. L. Milthorpe and published by Cambridge University Press at £50.00. Although the contributors presented their concepts at a symposium held in conjunction with the Thirteenth International Botanical Congress in Sidney in 1981, the chapters were written as components of an integrated advanced text. Divided into three sections covering initiation and early growth, leaf growth and the development of function, and the mature leaf and its significance, the text also contains a summary of the discussion on the papers at the symposium.

Curvature and Homology by Samuel I. Goldberg, originally published in 1962 by Academic Press, has been re-issued as a Dover paperback by Constable at £5.55.

BOOKS

Laser images

Holographic and Speckle Interferometry: a discussion of the theory, practice and application of techniques by Robert Jones and Catherine Wykes Cambridge University Press, £29.50 ISBN 0 521 23268 6

The appearance of the laser in the early 1960s brought to life Gabor's (1948) invention of holography; soon after, it was realized that the exciting three-dimensional images produced were so precise that interference patterns could be obtained from consecutive holograms of a changing object.

At that time the grainy, speckle effect of laser light was considered a nuisance; however, at a symposium in the University of Strathclyde in 1968 Dr G. Groh showed that it was possible to use these speckle patterns for measuring displacements, detecting fatigue, and so on. He showed that although the speckle patterns created by laser light shining on to a surface are random, they are uniquely related to the surface; and so, if the surface changes slightly an interference pattern can be generated by recording the two speckle patterns.

These two techniques of holographic and speckle pattern interferometry are usually combined using photographic recording methods. For many purposes these are fairly economical and work well because of the high resolution that such emulsions offer. However, they are both slow processes; and if, for example, one is recording a vibrating object through a wide spectrum of frequencies then the cost of plates and time can mount up. In about 1970 Jack Leenderz, who was working at Loughborough University of Technology with Professor John Butters, developed a video technique for displaying interference fringes derived from what came to be called electronic speckle pattern interferometry (ESPI), a technique that allows information to be displayed "live" (in the case of vibrations, say) or to be stored on tape for later analysis. It is, of course, much more sophisticated than this brief description implies. Both authors of this book have Loughborough as their background: Catherine Wykes is a research fellow working with Butters; and Robert Jones worked with Leenderz in the early days of ESPI development.

Although the presence of the word "discussion" in the subtitle of this book would imply that a measure of philosophical musing is to be found between its covers, this is not the case, as it is a straightforward textbook and laboratory manual - and none the worse for that. However, unusual emphasis is given to the techniques of ESPI; again, none the worse for that, for this is a remarkably clever and useful process that has been curiously neglected by industry and largely ignored by the academic community. Although its cost may be the reason in the case of the universities, it is surely well within the reach of industrial users.

The book will appeal most to post-graduate research students, but other workers in this field will find it an comprehensive laboratory manual of the theories involved (and a series of appendices summarize the necessary mathematics and background material). With laser interferometry being introduced into many undergraduate courses nowadays, the authors are justified in claiming that their book will also be useful to this readership, though perhaps only for senior classes.

The subject-matter is pretty well established by now, but there has been a need to present many topics in an organized form suitable for reference or teaching. Although the authors have managed to achieve this with considerable care, I still have some criticisms. As some of the examples have been known for some time, they could with a little more effort have found some more interesting and stimulating illustrations. Also, the chapter on "applications" is a bit thin; a wide choice of case-studies exists from which the authors might have made a better selection.

My only serious criticism of the book

is that it makes only a limited reference to "combined" holographic and speckle methods. Although all the information necessary for an understanding of this popular technique is included, it deserves a more thorough treatment than is presented here. When it comes to describing ESPI, however, the authors are on more familiar ground. Just why ESPI has not been more popular remains a mystery, for it offers the kind of speedy and comprehensive techniques of analyses that industry usually seeks. If the excellent exposition of the subject in this book doesn't do a lot to promote ESPI, it is difficult to know what would.

Elliot Robertson

Elliot Robertson is a senior lecturer in the department of mechanics of materials at the University of Strathclyde.

Vibrating systems

Noise and Vibration edited by R. G. White and J. G. Walker Ellis Horwood: Wiley, £48.50 ISBN 0 85312 502 3

Based on material presented in an advanced course at the University of Southampton's Institute of Sound and Vibration Research and containing 31 chapters by 24 authors, most of whom are members of the institute's teaching and research staff, this book provides a succinct and authoritative review of many aspects of noise and vibration theory. This is particularly true in the area of structural vibrations and their interactions with sound fields, to which much of the book is devoted.

Most chapters, though necessarily concise and lacking full mathematical developments, present comprehensive analytical results and direct readers to key reference material and sources of further information. For the most part, however, emphasis is on up-to-date theoretical methods, and these are treated with the practical insight that one might expect from this major centre of noise and vibration research.

Introductory chapters on basic acoustic and vibration theory are followed by reviews of techniques essential for the analysis of vibrating systems. Statistical energy analysis is given a complete chapter and three others deal quite extensively with the coupling between sound and structural vibration.

Interspersed with these chapters on vibration is a parallel review of acoustical phenomena. Chapter eight is devoted to the non-linear wave motions associated with high intensity sounds; examples include "buzz-saw" noise of supersonic rotors and the frequency distortion of random noise spectra. By way of introduction to aerodynamically generated noise, chapter 10 describes the structure of turbulence and the mathematical models used to represent its characteristics. Chapter 14 provides an excellent review of progress in the understanding and analytical treatment of jet noise (that is, "mixing" and "shock-cell" noise), and considers briefly the extensions to Lighthill's model which account for sound-field interactions and reduce noise prediction errors to the order of one decibel (empirical methods are not considered). Fan noise theories are outlined in a later chapter which concludes with advice on methods for reducing fan noise, devised largely as a result of aeronautical practice.

Chapter 12 addresses sound propagation in ducts including the effects of discontinuities, and compliant walls. However, it is a short chapter, and more practical applications would have been helpful, especially on the design of reactive mufflers. Practical considerations in the design of resistive sound absorbent ducts are treated fully in chapter 21.

Apart from two chapters on finite element methods the remainder of the book is devoted to practical noise and vibration control, the longest and possibly most valuable contribution being Professor E. J. Richards's fascinating account of machinery noise generation mechanisms.

Subjective matters of annoyance,



Royal Arcade between Old Bond Street and Altham Street, London. Built in 1879, the architecture of the arcade is extravagant in the high Victorian style. Taken from *Arcades: the history of a building type* by Johann Friedrich Geist, published by MIT Press at £40.00.

criteria, occupational hearing damage criteria and the effects of noise and vibration on comfort, health and work are reserved for the last four chapters, in which the latest ideas and standards in this often confusing area are well summarized.

Despite the large number of authors, the book is surprisingly coherent and the editors are to be commended for their organizational efforts. Although it covers a useful range of topics, it will be most valuable to those concerned with the structural aspects of noise and vibration.

J. B. Ollerhead

J. B. Ollerhead is senior lecturer in the department of transport technology at Loughborough University of Technology.

Ada standard

An Introduction to ADA by Stephen J. Young Ellis Horwood: Wiley, £29.30 and £9.50 ISBN 0 85312 535 X and 536 8

Ada, the programming language designed for the US Department of Defense, is at last beginning to have its expected impact on the information technology industry. The design process has been very cautious with many reviews and revisions. However, the revisions have now ceased, as the American standards organization (ANSI) has just accepted the language. In the next two months, the US Department of Defense is expected to validate two compilers, a process which involves running over 1,500 elaborate tests. Although reservations have been expressed on the reliability of Ada, the validated compilers should be superior to other computer software products.

The UK involvement with Ada is extensive: four members of the design team (more than the US), constant monitoring by the Ministry of Defence, and substantial interest from civil industry. Within Europe, we are the only country in which the defence, civil and telecommunications sectors all have a major stake in Ada. Fortunately, the academic community also has an interest, led by the University of York which is

writing a compiler for the language. The real benefit of the academic interest, however, is in teaching the language, which is the largest single cost in its introduction.

In the recent Alvey report commissioned by the Department of Industry, several technologies in the information technology industry have been selected for funding by increased government grants. If this research programme is approved, then Ada could well play a key role. Cheap professional computers can now handle large software systems. Programming such systems in Ada is the natural choice, as the language has been specifically designed for constructing large systems out of software components - called packages.

Stephen Young's book is supposed to be for students and professional programmers alike. To cover such a spectrum in 400 pages is no mean achievement. In fact, the first few chapters would be difficult for the novice, as too many concepts - many of them new to Ada - are introduced. If the reader can surmount this hurdle, then his effort will be well rewarded. The treatment is comprehensive, thorough and remarkably free from errors.

A fundamental problem in teaching Ada is to introduce concepts without forward references. For instance, some of the most advanced aspects of Ada are needed to perform input-output tasks. Although Young's treatment of each topic is good, the problem of the forward reference is not adequately handled. For instance, input-output is one of the later chapters.

A highlight of this book is the treatment of tasking. This facet of Ada, its ability to handle concurrent programming, is novel and represents a major hurdle for many books on the language. Young's treatment is excellent in all respects; as it describes the major concepts, illustrates the pitfalls of improper techniques (the shared variable), and gives convincing practical examples. Unfortunately, because of the novelty of this state one cannot be sure that tasking will be used in the way intended by the language designers (and given by Young).

Ada is designed for writing reliable software. A major contribution to this is the exception mechanism which can be used to contain and restrict the impact of errors (arising from hardware or software). Although adequate, Young's treatment of exceptions comes too late in

the book so that the consequences it may have for the rest of the language are difficult to perceive. The other major novel feature of Ada is the generic mechanism which allows much greater flexibility regarding re-usable software components. Young's chapter here is adequate but uninspiring. The initial examples of generics are more complex than necessary.

This useful introduction to Ada can be recommended to all but the raw student of programming. Unfortunately, it is of necessity designed for use with the July 1980 version of Ada rather than that now standardized by ANSI. Fortunately, the differences are small enough not to detract from the book.

Brian Wichmann

Brian Wichmann is one of the original designers of ADA.

Portable software

Portable Programming by Peter Wallis Macmillan, £5.95 ISBN 0 333 31036 5

"Portable programming is concerned with the production of programs that can be moved from one computer to another with less effort than would be needed to re-write them from scratch for the second computer. As the cost of producing software increases and the cost of hardware decreases it is easy to understand why portable programming is important and why software engineers have spent so much time on the subject. As the author points out, this development is a mixed blessing for the hardware manufacturers since it makes it more difficult to "tie" customers to a particular hardware product.

Intended for those planning a portability project, this book provides a review of the whole field rather than a detailed account of a particular solution (other solutions can be found from the bibliography). The book is in two parts. The first five chapters set the background to portable programming with sections on the legal protection of software, planning portability projects, maintaining portable programs and the problems of the physical distribution of portable software.

The chapter on legal protection looks at the uses that can be made of patents, copyrights, trademarks, confidentiality and post-termination contracts. Although it is interesting to find such a chapter in a book on portable software, it must be emphasized that the subject is applicable to all software.

Part two concentrates on designing portable software. Here the main problem areas lie in character handling, machine arithmetic, formatting of file store and local hardware features on particular machines. There is a good description of the problems involved in computer arithmetic followed by brief accounts of the pitfalls of using the high-level languages Fortran, Cobol and Ada. One chapter is devoted to the most popular method of the early seventies, macroprocessors, and another to the more modern method of compiler portability. The book ends with some comments on portable operating systems.

Although the author claims that there is about 12 hours teaching material in his book, I found it irritatingly superficial. He includes no programs, nor are there any examples of good or bad portable programming style. Furthermore he has almost completely ignored the international Standards Organization which is concerned to achieve the same effects as portability.

Finally, an opportunity has been missed to help a part of the community severely affected by the lack of portability, namely the computer hobbyist, and in this context a few words on writing portable Basic would have been appropriate.

Ronald Morrison

Ronald Morrison is lecturer in computational science at the University of St. Andrews.

BOOKS

SOCIAL ADMINISTRATION

Four walls

Housing and Inequality and Deprivation by Alan Murie Heinemann Educational, £13.50 ISBN 0 435 82626 3 Housing Policy and Practice by Peter Malpass and Alan Murie Macmillan, £12.50 and £4.95 ISBN 0 333 32842 6 and 32843 6

Housing Inequality and Deprivation, a report in the SSRCDHSS series from the "transmitted deprivation" programme, is a welcome contribution to research both on housing and on disadvantage. Though there have been some excellent recent books on housing policy - most of them also concerned in one way or another with deprivation and inequality - none has provided such a comprehensive assessment from this particular perspective.

Alan Murie begins, sensibly enough, by considering the relationship between, on the one hand, poor housing - overcrowding, lacking amenities, physically "unfit", inappropriate in form (high rise flats for families with children, for example) - and, on the other, various indices of well-being such as physical or mental health and the educational performance of children. Not surprisingly, he concludes that bad housing has deleterious consequences. Despite the undoubted general improvement in housing in Britain since 1945, there is enough of the bad left to harm some families and their children. The fact that there are now relatively few such families, and certainly fewer than there were, does not refute the criticism that, by the standards of a civilized and relatively rich society, their "deprivation" is excessive.

There are clear social and spatial patterns of disadvantage. Among those with low incomes, large families and single-parent families fare particularly badly. So do members of ethnic minorities; though there are more blacks than in the past in public housing, they are disproportionately represented in the poorer stock. And many of the deprived stay that way; they remain "trapped" in below-standard housing throughout their lives.

Housing inequality is not simply explained by low income. Wealth, income and housing are obviously related to each other. One of Murie's observations, underlining a point increasingly recognized, is about the part that subsidized owner-occupation plays in increasing the inequalities of wealth. His main emphasis, however, is on how it is that some families lose out while others do not. To understand this one needs to look closely at the different tenures.

The shares of the three main tenures have of course been changing, with private renting giving way to owner-occupation and, until recently, council housing. There have also been changes within tenures, in particular the greater accessibility of council housing to poor families. Up to 1939, and for some time after 1945, a justified criticism of local authority housing was that it mainly benefited the skilled and better-off semi-skilled workers and their families. For about 25 years it has, as a result of deliberate policy and in response to the decline in private renting, become increasingly open to the poor. With the encouragement to owner-occupation under both Conservative and Labour governments and to council house sales in particular under the present administration, higher-skilled and higher-income families are moving out of public housing and leaving it more and more the preserve of poor people.

Within council housing, though, there are wide variations in quality, as are the other tenures. The conditions under which a family has entered public housing - whether as a result of slum clearance, from the "waiting list" or because of homelessness - affect its bargaining power, as does the kind of home it needs; there are,

for example, few council homes suitable for large families. In addition, the assessments - often excessively judgmental - made by housing visitors influence what is offered. At the end of such processes, some low-income families end up in fairly decent public housing. Others end up in the worst homes, often in "deprived estates", where their neighbours share similar characteristics to themselves.

Though most people in owner-occupation are relatively well-housed, not all are. Murie again shows, as he does with the privately-rented sector, how the particular tenure operates to disadvantage some people, drawn disproportionately from the vulnerable categories. He demonstrates too that, despite the changes between and within tenures, there has been some historical continuity: not surprisingly, those worst-off for housing tend to be drawn from the same groups as in the past.

Housing Policy and Practice, with Murie as co-author to Peter Malpass, covers some of the same ground. For instance, its historical review similarly brings out the changes in the tenures, the two-way relationship between housing and wealth and the increasing concentration of the poor into public housing. But its purpose and coverage are different; the main aim, as the title

suggests, is to explain how policy gets translated into practice.

Housing, particularly but not only council housing, depends on a partnership between central and local government. Malpass and Murie tell the history of housing policy in Britain in terms of this relationship. They show how local authorities work within the framework set by central government, a framework which is increasingly tightly constrained, limiting local autonomy.

There are three case histories showing how particular local planning and housing decisions were conceived and how they developed under various pressures, including those from residents. The book gives something of the flavour of relationships between leading and other elected members and between members and officers. Scholarly research rarely explains how the rather abstract world of "policy" gets translated into what actually happens in the next street. Since this book does it will prove extremely useful, particularly to students.

Peter Willmott

Peter Willmott's latest book is "Inner City Poverty in Paris and London", with Charles Madge.

Phases of health

The Politics of the National Health Service by Rudolf Klein Longman, £4.25 ISBN 0 582 29602 1

Rudolf Klein's aim in this book is to explore the political contexts and processes that have shaped the development of the National Health Service since 1939. His central thesis is that the NHS, and the directions it has taken, need to be understood as attempts to accommodate the conflicts between competing values and interests that characterize all pluralistic societies. The NHS is, and always has been, a monument to political compromise.

In developing this thesis, Klein divides the history of the NHS into four broad periods. The first, from 1939 to the "appointed day" in 1948, is characterized by the "politics of creation", for it deals with the struggles to get the National Health Service Act onto the statute books and implemented. Klein concludes that there were no clear winners or losers in this period: what emerged was a consensus about the general aims of policy (reflecting a shared, optimistic faith in progress through the application of diagnostic and curative techniques), but a conflict about the means of achievement. Much of the subsequent history of the NHS can be understood as an attempt to contain the contradictions inherent in its creation.

In the second period, from 1948 to 1958, the "politics of consolidation", Bevan's grand but unrealistic aspiration of "universalizing the best" became increasingly discredited as needs were found to be far in excess of resources, and politicians were having to live with the uncomfortable fact that the service was becoming a mechanism for rationing scarce resources as much as an instrument for meeting needs. The focus of political tension lay between the centre and the periphery: if the logic of resource rationing required increasing control by central government, those at the periphery who were actually providing the care became increasingly frustrated at what was seen as restrictions on their autonomy. In fact, Klein suggests, a full-blown confrontation was avoided by allowing a very large degree of discretion within centrally sanctioned budgetary limits.

The third period, from about 1960 to 1975, brought about the "politics of technocratic change". It was the heyday of the quest for rationality and efficiency in the wider political and administrative systems, and fuelled by the growing realization of the capacity of medicine to generate ever-expanding demands for its own products, it is seen as a period in which the NHS was transformed from a welfare state into a technocratic one. Published by Academic Press, the book costs £18.50.

resolved issue of the balance of power between the centre and the periphery generated a mutual frustration between the DHSS and the NHS, ministers felt frustrated by their inability to translate formal power into effective power, and health authorities were frustrated by what they perceived to be excessive interference by central government. The 1974 reorganization of the NHS, marking the end of this period, is interpreted by Klein as a political exercise in trying to reconcile conflicting policy aims: to promote efficiency while placating the professions and to create an effective national management hierarchy while allowing adequate scope for managers at the periphery.

The fourth period, "the politics of disillusionment", is open-ended. Its main characteristic has been the changing nature of the health care policy arena itself. The growing militancy of all groups of workers in the service has added to the number of assertive actors on the political stage. The broad political consensus about the idea of a National Health Service has begun to crumble in the face of a strongly emerging alternative ideology of a mixed economy of welfare. The concern of central government has been as much to diffuse blame for the shortcomings of the NHS as to claim credit for its achievements. The faith in rational administrative action has been battered by the experiences of the 1970s, and the therapeutic optimism on which the service was launched has been attacked by those who seek to demonstrate the limited impact that health services have on health. And the combination of all these events and processes has been to put new issues on the political agenda: "to set a question mark against assumptions which hitherto had seemed generally set in the concrete of a generally accepted conventional wisdom".

Though not dealing explicitly with political theory, Klein's selection and handling of material implicitly reflects an approach that is grounded in a pluralist, bureaucratic-political view of how things work. The text reflects Klein's customary lucidity of style and freedom from opacity and jargon. In its early parts, particularly, the book draws upon material from the Public Records Office that has not previously been used in histories of the NHS. Unfortunately the index fails to do justice to the multiplicity and richness of the themes of the argument.

John Butler

John Butler is assistant director of the Health Services Research Unit at the University of Kent.

In *Social Work and Primary Health Care*, editors Anthony W. Clare and Roslyn H. Comey have brought together a number of papers which focus attention on "the extent of the social component of ill-health identified and managed in the primary care setting". Published by Academic Press, the book costs £18.50.

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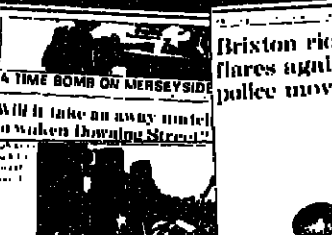
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GOVERNMENT AND URBAN POVERTY

JOAN HIGGINS, NICHOLAS EVANIN, JOHN EDWARDS, MALCOLM WILKES



The problems of Britain's inner cities are mounting. Recent events have brought them forcefully to public attention, but how are the authorities coping?

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THE SPECIAL BOOK NUMBERS FOR AUTUMN 1983

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BOOKS

SOCIAL ADMINISTRATION

Serving the poor

Social Policy in the Third World: the social dilemmas of underdevelopment by Stewart MacPherson
Harvester Press, £5.95
ISBN 0 7108 0195 5

The figures, of course, are notoriously unreliable. But they do give some sense of the differences. By the end of the 1970s, what the World Bank calls the "low-income" countries, those whose GNP per capita was less than \$380, were spending on average \$2 a head a year on health and \$3 on education. They had not increased this spending since the end of the 1960s. The "middle-income" countries were spending \$20 and \$34, and the "industrial market economies", like ours, \$239 and \$120. These were all increases on the previous decade. In this respect, therefore, as in others, black Africa, Bangladesh and some of the smaller south-east Asian countries are being let behind, and deliberately so; inside the Bank, they're now called the "basket cases".

Stewart MacPherson concedes that these differences in spending are one of the causes of the differences in provision. But he concentrates on other causes. Drawing on his experience in Uganda, Tanzania and Papua New Guinea, he draws attention to the emphasis on the growth of GNP, once again renewed after the World Bank's brief commitment in the 1970s to the satisfaction of "basic needs", points to the legacy of colonial indifference, and criticizes the presumption, still common in many Third World countries, that the provision of health and education and the other services should mirror the provision in the rich countries. It is preventive medicine that these countries need, primary education and extension to the rural areas, and the cheapest housing for the flood of poor and often unemployed migrants to the towns.

It is good to have a general review. Students of development, following those economists who used to argue, despite some of the econometric analyses of the European past by Simon Kuznets and others, that the traditional inputs, capital and labour, accounted for a larger part of economic growth, have tended to neglect what came to be thought of as unproductive expenditure in public goods. And MacPherson's examples from the countries he knows, although too general, and too weighted towards the past, are interesting. But he does repeat two faults which recur in much of the literature.

In the first place, he uncritically accepts the fashionable categories of the 1970s. He talks of "the development of underdevelopment" and "dependence" and the putative causes of these in "the world capitalist system". And like others, he uses them morally to nag rather than coolly to explain. He fails to ask himself whether there might be something to be said for dependency, whether the one thing worse than being exploited is not being exploited. After all, the Ivory Coast, still classically colonial in its economy, is now by far the most prosperous of the West African states, more prosperous even than Nigeria before its recent collapse, far ahead of the devastated Guinea and Ghanas who attempted to go it alone. And MacPherson fails to explain how it is that Sri Lanka, scarcely a strong economy, indeed one of the poorest societies in the world, and Cuba, itself completely dependent on the other "world system", have managed to do so extraordinarily well.

Cuba, indeed, may have one of the three or four best health services in the world, for none.

His other failing is to under-rate the difficulties of organization. "Two major problems", he says, "face governments which attempt to translate social policy principles into practice. One is the need to ensure that every sector operates on the basis of the principles which inform development objectives, the other is to relate the activity of

every sector with every other". Of course. But where in the world, outside Scandinavia, is this done? And where in the Third World is there the faintest chance of ever getting it done? Quite apart from the fact that some of the most egalitarian societies, and Cuba is again an example, are the ones which, precisely for this reason, have lost the larger parts of their professional and technical classes, it is just the case that what almost all poor countries lack is the organizational infrastructure (and indeed the organizational superstructure) through which to be able to deliver and to monitor their policies. Some, of course, have made heroic efforts. China, before the Party began to lose its morale and authority in the countryside in the late 1970s, and Indonesia, are examples. There, at the

price, of course, of the kind of social and political discipline that many western commentators find hard to take, some effort was or is being made to use local structures. China delivered a quite extraordinary degree of preventive health care, and in parts of Indonesia now family planning and child health programmes, working through policed villages and in the name of "guided democracy", seem to be having some effect.

China and Indonesia are among the poorest nations. Turkey, South Korea and Spain are not. Levels of spending per head on health care are almost the same in each. MacPherson is correct. GNP per head, the standard measure of development, is no guide to the provision of social services. But Turkey, Korea and Spain are scarcely now

developing their underdevelopment or even indeed, by most standards, "dependent". Nor are they the organizationally least equipped of societies. What one also needs to see (and MacPherson only hints at this in his pioneering but incomplete and simple account) is how behind the blandness of the plans and the public pronouncements these and poorer nations too come to decide, often in conjunction with and indeed under pressure from the banks outside and their entrenched professions inside, on their priorities and patterns of expenditure. The dilemmas of investment are political.

Geoffrey Hawthorn

Geoffrey Hawthorn is lecturer in sociology at the University of Cambridge.

Age concerns

The Effectiveness of Social Care for the Elderly: an overview of recent and current evaluative research by Matilda E. Goldberg and Naomi Connolly
Heinemann Educational, £14.50 and £6.50
ISBN 0 435 83353 7 and 83354 5
Social Work with Old People by Mary Marshall
Macmillan, £10.00 and £3.95
ISBN 0 333 32724 1

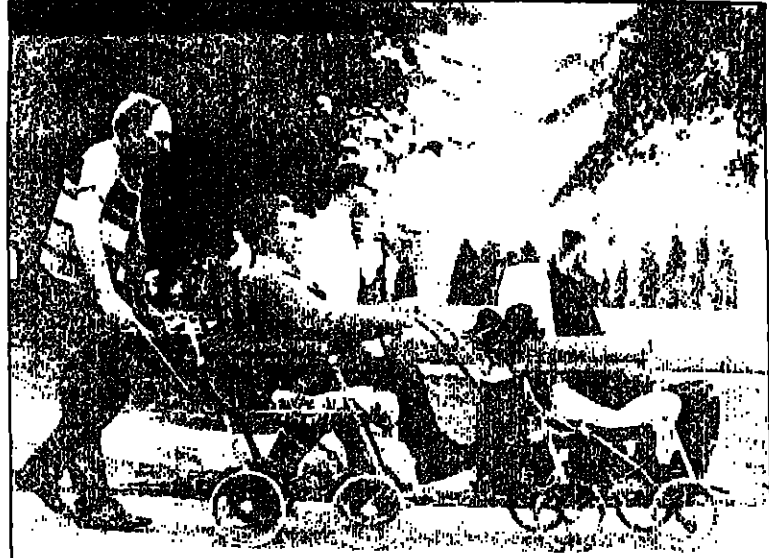
One of the central dilemmas for those who write about social care for old people and for those who actually create and deliver social services is to understand and provide for people in groups while at the same time recognizing the need of each person to be treated differently. These books together highlight that dilemma.

Matilda Goldberg and Naomi Connolly look to wider provision. To consider issues in the measurement of social care effectiveness they have drawn together a wide range of research and experiment, reviewing what is known about social care for the elderly and particularly what works in practice, and exploring policy issues.

It is apparent that the quality and quantity of research and innovation is patchy. There is, for example, a considerable body of material relating to residential care but relatively little in the field of day care provision. In spite of this variability the amount of research that has taken place since Goldberg's own study of the effectiveness of social work practice some fourteen years ago is enormous. Indeed, the hard-pressed practitioner labouring to deliver scarce services to increasing numbers of older people might well wonder where so many people have found the time and money to support so much research. It is, however, a delight after years of limited information and lack of attention to services for older people to have access to this large and growing body of evidence - however tentative much of it is - about ways of helping which actually achieve the results intended.

The place of "social work" within the broader spectrum of social care for the elderly depends, perhaps, on the definition of social work. Goldberg and Connolly describe "orthodox" social work as having played a peripheral role, largely because elderly clients have recently lost out in competition with services for children within social services departments. They argue that social workers should play a more central role, and emphasize the need for assessment and diagnostic skills, short-term interventions with specific aims, and the mobilization and co-ordination of resources.

Their academic discussion contrasts rather sharply with the warmth and concern for individuals which runs throughout Mary Marshall's book. She succeeds in the difficult task of relating a view of the separateness and individual worth of each old person. It is not, therefore, a book of generalities about care for old people but a sensitive exploration of how social workers can help each old person with whom they become involved. The presentation is clear and simple and draws from the author's own experience, informed



A Home of Their Own by Victoria Shennan (Souvenir Press, £7.95 and £5.95) traces the rise of provision of non-residential accommodation for mentally handicapped people. This picture shows four patients at St Lawrence's Hospital near Caterham, which pioneered in this field.

by conventional practice wisdom. Goldberg and Connolly argue that social workers do not need to be specialists in aging and Marshall, too, includes little background information from the field of social gerontology. It is certainly essential that social work with older people should be recognized as being just as important as, and similar to, social work with any other group. Nevertheless, there are special areas of knowledge and awareness in

the field of social care which will help to ensure that service delivery to individual older people is of a high standard. Each of these books makes its own excellent contribution to those special areas.

Paul Brearley

Paul Brearley is deputy director of the Leinard Cheshire Foundation.

Local authority

Planning for Priority Groups by Howard Glennerster, with Nancy Korman and Francis Marsden-Wilson
Martin Robertson, £16.50 and £5.50
ISBN 0 85520 575 X and 576 8

Planning for Priority Groups concentrates on the application of the government policy of giving priority resource allocation to the elderly, the mentally handicapped and the mentally ill, but the lessons it draws for the nature of social planning are of much wider significance.

Howard Glennerster outlines various alternative models of policy-making. The model which he regards as underlying much recent government policy in its planning for the priority groups is "the rational centralist" model, the starting point for which is that "the central department, informed by professional advice and commissioned research, guides local areas on good practice and sets desirable standards of care for the priority group. Local authorities and health districts work towards these standards as local conditions permit. Traditional statutory powers, incentives and inspectional functions supplemented by newer planning systems provide an adequate vehicle for achieving local implementation of national policies".

It is not surprising that Glennerster is able to show in his case studies of Wandsworth and Hounslow that "health planning bore little or no relation to the model set out in the official guidance" and that in the local authority "the gradual evolution of locally-based planning information is characterized less by reliance on national norms and more by locally generated knowledge". But although Glennerster shows that reality departs sharply from the centralist rational

planning model, he does not make the mistake of arguing that the central intervention was totally ineffective. He argues that central government had an influence on the climate of opinion or as he puts it "through a rather intangible but very real shift in the balance of prevailing values".

The importance of this work is that his analysis does not lead him to reject the rational planning model in favour of a model of bureaucratic policies. Rather he sees the dichotomy between them as unrealistic. After all "the most successful planners were those who could play the competitive game and win, or win some of the time".

Glennerster shows himself a leading exponent of an emerging group of writers in a number of fields who while recognizing the lack of reality of rational-comprehensive models applied in their entirety, nevertheless seek processes which can improve policy-making. He does not advocate rejecting all elements in the rational model, but advocates improved processes for appreciating the problems, making choices, implementing intentions and evaluating the results. In particular he emphasizes the needs for client group inputs.

The book has some relevance to issues of policy planning in education, particularly in its contribution to the dilemmas of central-local relations. Glennerster builds on his conclusion that the greatest contribution of central government in his fields of concern have been in changing the "value climate and the rules of debate". He sees the danger of detailed guidelines which did not take account of local variations in both preferences and situations. He suggests means by which central government can influence rather than determine local policy.

J. D. Stewart

J. D. Stewart is professor of local government and administration at the Institute of Local Government Studies at the University of Birmingham.

BOOKS

SOCIAL ADMINISTRATION

Back to school

From Crime to Rehabilitation by M. J. A. Glickman
Gower, £14.50
ISBN 0 566 00539 5

In the mid-1970s the National Association for the Care and Resettlement of Offenders, with financial support from the Home Office, set up a project called Nacro-Education which was designed to help ex-prisoners to re-establish themselves in normal society through a specially adapted scheme of formal education.

This project had two principal components: an advisory service and a hostel. Recruitment was by referrals from probation, prison welfare and prison education officers. The advisory service suggested further and higher education colleges to which clients could apply for admission to a variety of courses, and it also made contact with the colleges regarding the suitability of applicants. The hostel, or "unit" as it was later termed, catered only for a small proportion of ex-prisoners on the project.

M. J. A. Glickman was appointed as research officer to the unit shortly after it began. His careful and detailed study of what happened during the first three vital years forms the body of his book.

The general hypothesis which was to be tested was that the rehabilitation of ex-prisoners could be assisted by their undergoing periods of formal education, the lack of which in their earlier lives could be regarded as a serious social handicap. It was a simple, even naive, idea and had to be drastically modified during the project's first three years.

During the first year 11 students were studied and their degree of progress was analysed. Nine of them lived in the hostel while the other two lodged nearby. All went out to take courses at the local "Tech". In terms of paper qualifications, only two improved their scholastic records by gaining an additional O or A level pass. These results were considered unsatisfactory and almost all the students experienced considerable difficulty in settling down to formal academic work. The pressure on them was clearly too intense and, in Glickman's words, the unit was falling because it was concerned more with processing people than with changing them with the short-term rather than the long-term objective of genuine rehabilitation.

The second year saw another policy change. Henceforth, admissions would only be for those with good educational records in prison. These "bright young guys" were educationally successful but almost entirely because they had learned the art of private study before joining the unit. Hence the project's hypothesis was still not proved.

Year three brought an even more drastic change of policy. This time the unit was turned into a "mini-school". Some of the staff were qualified teachers and they were assisted by both paid and voluntary part-timers. Classes were kept very small, tutorial supervision tightened and fewer options allowed. The results proved unimpressive and again the project encountered unexpected obstacles.

The experiment was extended for another two years but this period added little to its research value. Glickman's main conclusion is that the unit made a mistake by insisting on so much formal work and concentrating on academic qualifications. Offenders, would have been given more long-term help had they been allowed to work at their own pace and on subjects of their own choice. The training they needed did not get was in the art of private study which every successful university undergraduate is obliged to acquire. "Education", Glickman comments, "is not a panacea for social problems and, certainly, in itself possesses no rehabilitative virtues". It is a lesson that experience in Educational Priority Area schemes seems to endorse.



John B. Mays, who took an Open University degree while in prison, speaking at University College, London.

Glickman's book is a model of how to conduct a study of a project during the course of its development. He is sympathetic while being rigorously critical and the 12 case studies included in the book are detailed and fascinating reading which cogently exemplify his analytical argument. From the sociological viewpoint he has usefully moderated Becker's theory of commitment and his distinction of the meaning that the unit had for its inmates, that is as a "staging post", a "resort" or "a colony" is heuristically enlightening.

Altogether, this is a fine example of a scholarly assessment of a practical remedial project and will be welcomed by all concerned with the welfare of ex-prisoners whether as educators or after-care officers.

John B. Mays

John B. Mays was until recently professor of sociology at the University of Liverpool.

Partial solutions

Marital Violence: the community response by Margaret Borkowski, Mervyn Tavistock and Val Walker
Mushroom, £10.95 and £4.95
ISBN 0 422 78120 7 and 78130 4

In the early 1970s two great "moral panics" caught the policy-makers almost totally unawares: Erin Pizzey's revelations about wife battering, and Sir Keith Joseph's assertion that social problems were being transmitted in a minority of families via a "cycle of deprivation". Suggestions of such serious pathology in the basic institution of the family clearly presented a major challenge which makes a study of policy responses during this period especially fascinating.

Academics were called upon by the DHSS to undertake basic research, but unfortunately the main outcome has been to underline once again that social researchers suffer from a "trained incompetence", arising from the intellectual separation of their subject specialisms and value positions, which prevents the production of explanations usable as guides to policy. Like people in the dark with an elephant, each specialist apprehends only part of the problem, working with selective perceptions. As might be expected from the spectrum of disciplines represented - not only social policy, but also criminology, social work and sociology - they cover a wide range of topics. These include idealism and realism in education, women and social welfare, social policy in Scandinavia and Britain, crime in the welfare state, and social work education.

The essays are dedicated to David Marsh, one of the first in this country to profess social administration, who held the chair of applied social science at Nottingham University from 1954 until 1981. However, since this is not in any formal sense a festschrift the contributors cannot find a unifying theme in the various strands in Marsh's writing and research.

and bring their marriages to an end. So again the professionals come to their self-selected clients "with a toolbox of shorthand theories" ... then they "proceed to search for evidence in the client's circumstances and history that will fit the favoured theories." Almost inevitably this kind of professional intervention and negotiation with clients tends to reinforce the view that violence is a result of individual pathology focused on the client.

Thus ironically in view of its title the book reveals that in their response to marital violence professionals are far from being a community. "Undercurrents of rival professional status and inter-group psychology infused and coloured many of the practitioners' comments about the role of other services dealing with marital problems." So that "our medical, legal and social care systems may be conceived of as three distinct worlds, each with a different specialist language and set of professional values", each made up of complex networks of related occupations. The authors show convincingly that DHSS exhortations for collaboration in response to family violence quite underestimate the barriers between different professional and functional terrains.

On the basis of their research, the Bristol team recommend reorganization of the services, most notably the subordination of the now largely irrelevant Marriage Guidance Council to the provision of services for and through general medical practice, which emerges time and again as the first port of call for women suffering violence in marriage. And they urge a more coherent 24-hour emergency service associated with the police and backed up by self-help, government-funded refuges.

But alas for such hopes, the official stance on family violence seems to have changed. While in 1977 the DHSS interests were "inclined to share the view of the women's movement that violence should be understood primarily in terms of sexual politics and patriarchy", by 1982 they "became more aware that the feminist viewpoint represented something of a doctrinal challenge to their interests". It appears the government does not propose to develop a social policy on marital violence any further, to finance refuges or education for practitioners or more research. While academics, professionals and practitioners have failed to collaborate, the Conservative party, ostensibly devoted to the defence of the family, has declared an end to the moral panic about family violence - leaving its victims still inadequately protected.

Dennis Marsden

Dennis Marsden is reader in sociology at the University of Essex.

Collage of views

Approaches to Welfare edited by Philip Bean and Stewart MacPherson
Routledge & Kegan Paul, £13.95 and £6.95
ISBN 0 7100 9423 X and 9424 9

The 18 original essays on social welfare assembled here are largely the work of established scholars. As might be expected from the spectrum of disciplines represented - not only social policy, but also criminology, social work and sociology - they cover a wide range of topics. These include idealism and realism in education, women and social welfare, social policy in Scandinavia and Britain, crime in the welfare state, and social work education.

The essays are dedicated to David Marsh, one of the first in this country to profess social administration, who held the chair of applied social science at Nottingham University from 1954 until 1981. However, since this is not in any formal sense a festschrift the contributors cannot find a unifying theme in the various strands in Marsh's writing and research.

The problem is, of course, the simple one that a reading of the essays suggests at least three different "approaches" to welfare. The first concerns issues surrounding the delivery of social services, as in Kathleen Jones's succinct consideration of ser-

vices for the mentally ill. The second approaches the subject through conceptualizations of welfare provision. This can be illustrated from Richard Silburn's conclusion on the legacy of the Poor Law "that despite earlier reports to the contrary, Mr Bumble, the Beadle, is alive and well, and lives near the Elephant and Castle", though the idea of a beadle inhabiting such a locus of centralized power must make us wonder on the fruitfulness for understanding past or present in such compression. The third approach to welfare concerns broader theorizing. So, Adrian Webb, in one of the strongest contributions, suggests that the different perspectives found in the key texts on social administration seem "to illustrate an almost bizarre lack of agreement about the intellectual map required in a systematically theoretical approach to the study of social welfare and social policy formation".

Identifying distinct uses in "approaching" welfare is more than a happy solution to the problems confronted by the reviewer of this collection of essays. Social administration as a study started life at much the same time as the creation of the Victorian administrative state, but separating the condition of the art from consideration of the state of the nation seems of particular importance in the light of the realization of several of the authors that the study of social administration has recently entered a new phase.

It is around the condition of the study of social welfare that the most significant themes in these essays

emerge. It is a clear sign of sustained intellectual activity that scholars are beginning to identify distinct ways of studying the subject. The "traditional" is now contrasted with the "new", though the former is truncated so that it largely excludes the contributions in the development of the study of social administration of thinkers at the turn of the century and earlier. Philip Bean's brief consideration of utilitarianism would have benefited from the kind of detailed historical inquiry that R. A. Parker gives to the more recent gestation of the Children's Department in 1948.

Above all, we can see in this collection both critical self-evaluation, as in John Westergaard's consideration of distributive justice from a Marxist viewpoint, and also the identification of certain key problems. Thus, Adrian Webb argues that "social administration textbook writers tend to neglect most consistently the explanation of individual and small group behaviour." This is an ironic development if one takes a longer view of the study of social administration than is evident in many of the essays, but in this book Peter Leonard struggles "personally" to find a place for the individual amid the thickets of Marxian conceptualization.

Noel Timms

Noel Timms is professor of social work studies at the University of Newcastle upon Tyne.

Heinemann



After the New Right

by Margaret Borkowski, Mervyn Tavistock and Val Walker
A detailed analysis of the New Right's social doctrines and their underlying economic philosophy.
paper £6.95 cased £12.50

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The Fight to Save Children from Damage by Lead in Petrol
by John Wilson
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Edited by Howard Glennerster
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The Creation of the British Personal Social Services, 1962-74

by Joan D. Cooper
Written with inside knowledge and professional expertise, this will be of wide interest to anyone concerned with social policy, social work, and the nature of public policy.
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Edited by Arthur Williamson and Graham Room
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by Alan Murkin
The British Community Development Project 1968-78 - a study of government intervention
Martin Lane
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Heinemann Educational Books
22, Bedford Square London WC1

BOOKS

SOCIAL
ADMINISTRATION

Young offenders

Delinquency: the problem and its prevention
by Denis Stott
Batsford, £9.95
ISBN 0713441968

There seems to be a critical point in the evolution of disciplines, at any rate in the social sciences, at which the best minds agree to devote themselves wholly to writing books about each others' books. In the case of criminology the decisive shift of emphasis became apparent about fifteen years ago, since when it has become increasingly down-market for any criminologist concerned about his academic reputation to spend his time in actually studying crime or criminals.

Denis Stott is a splendid nonconformist. His delinquency researches began in Glasgow in 1945, and since then he has identified himself with the detailed study of individual offenders and their backgrounds, patiently dismissing every sociological theory as another example of an unfortunate neo-Platonic disregard for facts. It is impossible not to admire his unquestioning commitment to positivism, his apparent immunity to epistemological doubt.

Professor Stott's views on the causation and management of delinquency run counter to most of the modern assumptions of the seventies and eighties. Unhesitatingly, he embraces a medical model of delinquency: youthful offending is a form of maladjustment, a manifestation of "breakdown" brought about by failure in the affectional relations between child and parent. The appropriate response to delinquency lies partly in the deconstruction of responsibility for law enforcement to local communities - an idea which is perhaps beginning to gain a new acceptance - but more importantly in the early identification of potential delinquents and the reduction of family stresses by social casework and counselling methods. If, says Professor Stott, we find today widespread cynicism about the value of social work intervention, it is because the latter has generally been undertaken by people who were inadequately trained or had an excess of competing commitments and in any case came too late on the scene, offering halfhearted first aid rather than systematic prevention.

It is certainly arguable that the therapeutic nihilism that now prevails among academic commentators on delinquency results principally from the theoretical confusion and ineffective practice which characterize much modern social work. The manifest failure of many treatment enterprises has given added impetus to the campaigns favouring minimal intervention - campaigns which in their turn have sapped

still further the diminished self-confidence of practitioners. That consideration apart, Professor Stott's view of delinquency must be treated with some reserve. His dismissal of the critical perspectives offered by sociologists is a shade too comprehensive and although he emphasizes the virtue of close attention to the facts, his use of data is at times both selective and uncritical.

Several studies of self-reported delinquency have shown that a high proportion of boys commit offences, only a minority of which result in arrest and prosecution. It is difficult to reconcile such findings with Professor Stott's view of delinquency as pathological, and he is obliged to argue that there are fundamental psychological differences between those who do and those who do not find their way into the official statistics - a claim not substantiated by evidence such as he rightly requires of others.

Managers make decisions

Managing Social Work
by Terry Bamford
Tavistock, £10.50 and £4.95
ISBN 0422 77960 1 and 77970 9

Terry Bamford's book approaches most of the key issues which confront managers in the personal social services with a sound blend of awareness of recent research, understanding of the main aspects of management theory and robust common sense. He reminds his reader that managers are in the business of making decisions, and he emphasizes that accountability is about power and responsibility, that supervision in social work is a managerial as well as a professional or educational concept and that publicly employed social workers must come to terms with these organizational realities.

As Bamford's title indicates, the book is about "managing social work", but he is clearly aware that such management is concerned with many more activities and services than simply social work. He emphasizes that social workers who reach managerial roles must recognize that management is a professional activity, though at the same time he does not recommend the management of social services departments by non-social workers (his last word on this being to endorse the Barclay Report view that "management is a social work task"). Hence he seems to take for granted the case for professional social work hegemony in social services departments, yet does not really argue the case for it. Instead he over-emphasizes the management of social work and gives little attention to the other occupational groups in social services departments.

This is the first British primer on social work or social services management. But with so few people engaged in management training it faces a problem in securing a wide readership. The editor's introduction to the series in which it appears suggests that it is for

What are we to make of the central argument that most young delinquents are maladjusted, given the lack of any evidence of detectable psychiatric abnormalities on a substantial scale? To assert that delinquent conduct is by its very nature maladjusted merely begs the question. Elsewhere however Professor Stott claims (and cites Canadian data) that delinquents can be clearly distinguished from their non-delinquent peers by scores on the Bristol Social Adjustment Guide, a report form completed by teachers. The discriminating BSAG items include stealing (two measures), borrowing books without permission, damaging private property and damaging public property, and to that extent are not independent of the variables that is predicted. Other items indicate behaviour which though undoubtedly disagreeable would not be seen by most observers as indicating maladjustment calling for treatment, except

"undergraduate and postgraduate students of social work and social administration". At present, such students have little teaching of this kind and whatever they do get very often tends to inculcate the view that work in social services department will involve bureaucratic employment in all the senses in which the word "bureaucracy" is used pejoratively. However accurate that may be, its effect tends to be disabling. Terry Bamford's book is therefore welcome in making issues about ways of operating within bureaucracies its main concern.

The book should be used in carefully planned management courses, in which many of the ideas and techniques it discusses can be examined and explored in practical exercises. Its sophisticated, but necessarily rather hurried, tour through the many issues that confront social service managers will only really come into its own when management training is much better established for the British personal social services.

Michael Hill

Michael Hill is senior lecturer in the School for Advanced Urban Studies at the University of Bristol.

The needs of the parents

Parents, Professionals and Mentally Handicapped People: approaches to partnership
edited by Peter Mittler and Helen McConachie
Croom Helm, £12.95
ISBN 0 7099 1750 3

For the parents of most children "partnership" with professionals probably means to what devices and what else organized by the Parent Teacher Association. A few parents may be invited into their child's class during the day and fewer still may help out in the classroom. Feedback about children's performance is on the whole, confined to end of term reports, discussions on open day and the occasional hurried word at "home time". For an increasing number of parents of children with disabilities, however, "partnership" is beginning to have real meaning.

Since the passing of the Education (Handicapped Children) Act, 1970 which ensured for the first time that all children with severe learning difficulties received education, a quiet revolution in both theory and practice has taken place. The development of behavioural techniques in education, pre-school training programmes, the pioneering work of the Hester Adair Research Centre, the Thomas Coram Research Unit, the early Portage projects and others have, in combination, transformed the early care and education of children with mental handicaps in this country. *Parents, Professionals and Mentally Handicapped People* is both a testament to that quiet revolution and a signpost to future development.

The book is based, for the most part, on edited and adapted papers given at an international "action seminar" held in Manchester, 1981 on the theme of "Approaches to Parental Involvement". Despite the international na-

perhaps where an individual was marked by a considerable cluster of such traits; but how the identified factors hang together is not something we learn about.

It is a pity that Professor Stott, like the single-factor theorists he attacks, has little use for pluralism and yearns for a comprehensive explanatory model. Nevertheless, this eminently readable book contains many insights by no means wholly dependent on the author's particular theory; those who are concerned with the management of delinquency do not have so many successes to their credit that they can afford to ignore them.

F. M. Martin

F. M. Martin is professor of social administration at the University of Glasgow.

ture of the seminar all but one of the original papers concern partnership in the UK and discuss, among other things, ideas for meeting parents' needs and the nature of partnership between parents and professionals in infancy and early childhood, in the school years, and in adolescence and adulthood. An introductory overview by Mittler and McConachie puts forward a rationale for partnership between parents and professionals, and, most importantly, sets a series of questions and statements which define the concept.

In the final section of the book McConachie summarizes the European participants' experiences of partnership while Mittler draws together the "action plans" which they prepared for use in their own communities. Other possibilities for progress which arise directly from the papers themselves and from discussion are also discussed.

For a non-specialist reader the book is, perhaps, too dense with the inevitable overlap of ideas that results from a collection of papers on a single subject. However, for parents, teachers, psychologists and others involved in special education and care, it will be a valuable resource. Even the most well-intentioned professionals should be prompted to re-analyse their approach to partnership on reading the parents' contributions and Mittler and McConachie's introduction. Parents who are still struggling for recognition of their role as partners will have their case strengthened by the accounts of what can be and has been done elsewhere.

Despite the book's emphasis on partnership a cautionary note runs through it. Some parents do not necessarily want to be partners; far from being considered uncooperative, their freedom of choice should be respected. The "individualization" of services, preserving an element of choice for the parents of children with mental handicaps, is emphasized.

Readers may feel that this book gives too rosy a picture of development in partnership. The United Kingdom comes out well from the international comparisons made, but at a small gathering it was, perhaps, inevitable that participants should have had experience of what is good in this country. Yet many schools still have only rudimentary, and some non-existent, provision for partnership with parents.

It is to be hoped that this collection of papers will stimulate further dissemination of the message of partnership.

Gillian Parker

Gillian Parker is research fellow at the Social Policy Research Unit at the University of York.

David Gerard's book *Charities in Britain: conservatism or change?* proposes guidelines for analysing the contribution of the voluntary sector to national well-being. It is set against both the revival of academic interest in problems of community care and local participation in welfare provision; and the problems caused in the public sector by public expenditure "constraints". It sets out to provide information on the voluntary agencies and their impact on the problems they tackle, and includes sections on the basis of the voluntary contribution, its legal framework and organizational aspects. It is published by Bedford Square Press at £5.95.

Learning to use economics

Economics and Social Policy: an introduction
by Alan Gordon
Martin Robertson, £16.50 and £5.95
ISBN 0 85520 527 X and 528 8

The propensity of undergraduates to compartmentalize their learning is pretty deep-rooted and seems to remain immune to most pedagogical remedies. One might expect this to be less of a problem for social policy - a field of study to which, after all, a number of disciplines contribute - but the pigeon-holing remains as deeply rooted there as anywhere. How often do students in a social policy seminar refer to anything they have learned in economics?

Presumably with this in mind, Alan Gordon has attempted to bridge the gap by producing a book not so much on social economics as on basic economics for social policy and administration students. The measure of his success will be the extent to which, having read the book, social policy students will feel more comfortable with simple economic theory, see its relevance, and begin to treat it as a natural component in discussions on policy issues.

The book falls into two parts, the first broadly concerned with economic policy and public expenditure, the second with economic theory and social policy. The social policy content of the different chapters varies widely. Thus, within part one, Gordon deals with the rise in social services expenditure up to the end of the 1970s and its subsequent decline, including a slight discussion on whether expenditure cuts are necessary, taxation policies (with all too short a piece on the black economy), local government finance, the redistributive effects of taxation and public expenditure, welfare expenditure and economic growth, and a brief excursion into "monetarism". This last is disappointing in its brevity (especially on money supply - it's doubtful that many readers will discover the truth about M1, M2, M3, and so on, in these short paragraphs) but Gordon does well to debunk the idea that monetarism was a sudden and radical departure from economic orthodoxy by the present government.

Though each of the chapters has a short guide to further reading, some remain rather superficial. Perhaps Gordon should have concentrated on fewer areas. The second part of the book introduces basic economic theory ranging over marginal value, elasticity, demand and supply curves, market mechanisms and the effects of intervention. The final two chapters concern efficiency in the welfare services, and the technique of cost benefit analysis. The integration of social policy topics is rather more successful in this second half mainly as a result of the use of examples of the application of economic theory to the demand for and supply of health, education and housing services. Again, if there is a complaint to be made, it is that the discussions do not go far enough. Useful as it is to the student of social policy to consider the relative effects on the supply of privately rented housing of rent control on the one hand or income supplementation on the other, even a purely economic analysis ought to go on to consider the effects on welfare expenditure of supplementing low incomes to the extent necessary for the poor to purchase reasonable housing services in (say) London, or the value of subsidizing private landlords from public funds. And, for a book that claims to introduce the main economic policy debates of the early 1980s why is there nothing on vouchers or tax credits? A serious omission.

There is a delicate and difficult line to be drawn between a succinct but relatively comprehensive account and one that is superficial. This book veers slightly to the latter side of the line.

John Edwards

John Edwards is lecturer in the department of social policy and social science at Bedford College, London.

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Universities

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With good first degrees for work in all areas of Electrical and Electronic Engineering and Applied Computer Science.

Standard SERC grants. In many cases, with substantial supplementation through CASE and CTA Awards.
Further particulars and application forms (2 copies) may be obtained from the Personnel Office, University College of Swansea, Singleton Park, Swansea, SA2 8PP, to which office they should be returned by Friday 24th June, 1983.

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LECTURESHIP IN SPANISH

Applications are invited for a Lectureship in Spanish for one year from October 1983 at a salary of £12,500 per annum, together with an allowance for the U.K.S. Candidates should have a good degree in Spanish or a good degree in a related subject, with research and teaching experience. Candidates with research interests in the field of Spanish literature, history, culture, or other areas are not excluded.

Further particulars and application forms may be obtained from the Registrar, University of Durham, Leazes Road, Durham, to whom applications should be returned before June 30th 1983.

University of Keele

DEMONSTRATOR

Applications are invited for the post of Demonstrator in the Department of Biological Sciences for one year from October 1983 at a salary of £6,500 per annum, together with an allowance for the U.K.S. Candidates should have a good degree in biology or a related subject, with research and teaching experience. Candidates with research interests in the field of microbiology, plant physiology, or other areas are not excluded.

Further particulars and application forms may be obtained from the Registrar, University of Keele, Staffs, to whom applications should be returned before June 30th 1983.

UNIVERSITY OF THE SOUTH PACIFIC

Applications are invited for the post of

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An engineer of proven ability and a wide range of experience in the telecommunications field is required for the University's Extension Services Telecommunications programme at the Lautala Campus, Fiji. The University has a wide range of modern terminal equipment including VHF satellite transceiving equipment, broadcast audio and video equipment, microcomputers, facsimile and SSTV units which interface to the VHF satellite link. Knowledge of satellite communications technology is essential, particularly in utilising VHF high power transponders and in the development of alternative low-cost earth stations. The Technical Manager will be responsible to the Director of Extension Services for advising on the development of all aspects of the University's telecommunications needs, liaison with other institutions, attendance at relevant telecommunications conferences, preparation of annual technical budget and to develop the Apple II computer for educational data transfer. Applicants should have a degree or equivalent qualifications, a proven competence in management, and be familiar with all facets of the operational technologies involved in the project. Substantial experience in the telecommunications field would be an advantage.

Salary will be in accordance with qualifications and experience in the scale: F\$15,749 to F\$18,487 (24 sterling equals F\$1,600). In addition the University provides gratuity amounting to 15% of basic salary, appointment allowance and, subject to the University's current housing policy, partly furnished accommodation at a rental of 12 1/2% of salary. The University will pay an allowance in lieu of superannuation of 10% of standard salary. In some cases this allowance may be paid direct to the appointee's existing superannuation scheme subject to a decision on acceptability of the scheme by the Commissioner of Inland Revenue.

The University has a small number of positions within its establishment for which the British Government provides supplementation payments (BESS). The present post carries no such benefits and is offered on local terms and conditions only. Appointment will be for a contract period of three years and may be renewable by mutual agreement.

Candidates should send THREE COPIES of their curriculum vitae with full personal particulars, names and addresses of three referees and date of availability, to the Registrar, the University of the South Pacific, PO Box 1166, Suva, Fiji, to reach him no later than 30 June 1983. Applicants resident in the UK should also send one copy to the Overseas Educational Appointments Department, The British Council, 90-91 Tottenham Court Road, London W1P 0DT quoting reference U73/83. Further details available from either address.

University of Leicester

LECTURESHIP IN THE DEPARTMENT OF ENGLISH

Applications are invited for a Lectureship in the Department of English for one year from October 1983 at a salary of £12,500 per annum, together with an allowance for the U.K.S. Candidates should have a good degree in English or a related subject, with research and teaching experience. Candidates with research interests in the field of English literature, history, culture, or other areas are not excluded.

Further particulars and application forms may be obtained from the Registrar, University of Leicester, Leazes Road, Leicester, to whom applications should be returned before June 30th 1983.

University of Liverpool

LECTURESHIP IN PURE MATHEMATICS

Applications are invited for a Lectureship in the Department of Pure Mathematics for one year from October 1983 at a salary of £12,500 per annum, together with an allowance for the U.K.S. Candidates should have a good degree in pure mathematics or a related subject, with research and teaching experience. Candidates with research interests in the field of pure mathematics, history, culture, or other areas are not excluded.

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LOUGHBOROUGH UNIVERSITY OF TECHNOLOGY

LECTURER

Applications are invited for the post of LECTURER in the Department of Library and Information Studies. The post will primarily be concerned with the teaching of management, in theory and practice to undergraduate and postgraduate students. Sound management experience in a large organisation would be an advantage, together with some teaching experience. The appointment will be for three years in the first instance; the appointment will be made within the salary scale £8,375 to £13,505 (under review). Further particulars and application forms from Paul Johnson, Establishment Officer, Ref: 83/39, Loughborough, Leicestershire.

Southampton THE UNIVERSITY

DEPARTMENT OF ELECTRICAL ENGINEERING

Applications are invited for the post of Lecturer in Electrical Machines in the Department of Electrical Engineering, beginning 1st October 1983 or as soon as possible thereafter. Candidates should have a good degree with supporting industrial or other professional experience. Salary scale: £6,375-£13,505 per annum (under review). The initial salary will depend on qualifications and experience. Further particulars may be obtained from Mr D. A. S. Copland, The University, Southampton SO9 4NH to whom applications (7 copies from United Kingdom applicants) should be sent not later than Friday 10th June 1983 quoting reference No. 2008/A.

UNIST

University of Wales CIVIL ENGINEERING AND BUILDING TECHNOLOGY

RESEARCH ASSOCIATE

(Computer Programmer) (fixed term - 2 years)

Duties will include programming on a range of research and teaching projects. Prior experience in civil engineering or computer programming is essential. Salary: within range 1A Research and Analogue Staff £6,375-£11,105 per annum (under review). Requests (quoting Ref. A.3) for details and application form to Staffing Office UNIST, PO Box 58, Cardiff CF1 3XA. Closing date: 24 June 1983.

University of London

The London School of Economics and Political Science LECTURESHIP IN LAW

Applications are invited for a Lectureship in Law in the Department of Law, to be held in the area of a number of subjects. Candidates should have a good degree with supporting industrial or other professional experience. Salary: within range 1A Research and Analogue Staff £6,375-£11,105 per annum (under review). Requests (quoting Ref. A.3) for details and application form to Staffing Office UNIST, PO Box 58, Cardiff CF1 3XA. Closing date: 24 June 1983.

Further particulars and application forms may be obtained from the Registrar, The London School of Economics and Political Science, 25 Bedford Square, London WC1R 4EU. Closing date: 24 June 1983.

The Natural History of ALCOHOLISM

Causes, Patterns, and Paths to Recovery
GEORGE E. VAILLANT, MD

Based on an evaluation of more than 600 individuals followed for over 40 years, this monumental study offers new and authoritative answers to the fundamental questions about alcoholism. Beginning his observations before the onset of the disorder, Vaillant is able to determine whether particular family backgrounds, personality types, or genetic traits predispose a person to abuse of alcohol. He charts the progress of alcoholism and the paths toward abstinence, toward return to normal drinking or, in some cases, toward premature death. His longitudinal "vantage point" also permits important inferences about successful therapy, showing that treatment may be most effective when it reinforces the natural healing process and enables it to take place. His findings on the efficacy of various treatment methods - including Alcoholics Anonymous - will prove invaluable to physicians, social scientists, and alcoholics and their families. May 1983, £20.00

Harvard

Harvard University Press, 120, Buckingham Palace Road, London SW1W 9SD

**University College
Cardiff**
University Hall
WARDEN

Applications are invited for the above post. Salary Range will be Administrative Grade 15 and duties will be commensurate January 1984.

Applications (ten copies) together with the names and addresses of three referees, should be forwarded to the Director of Recruitment & Registration, University College, P.O. Box 78, Cardiff CF1 1TL, from whom further particulars will be available. Closing date 10th June 1983.

[illegible]

Application forms are further purchased may be obtained from the Registrar, Leeds University, Leeds LS2 9JT. reference number 93/P/1. To whom application should be addressed. The date for application is 15/10/93.

**FURTHER CHAIR IN
MECHANICAL
ENGINEERING**

Applications are invited from persons with industrial experience for a further Chair in the Department of Mechanical Engineering. Further details and an indication of the field of interest will be obtained from the Secretary and Registrar, University of Southampton, Hampshire, to whom applications (10 copies) should be sent. The University of Southampton is in the United Kingdom. Applications should be sent before 15 January 1975.

business and corporate planning in the School of Industrial Engineering. Candidates must have business experience in one of the corporate planning or senior general management.

Initial salary will be \$24,255 p.a. (t.e.) and \$26,375 p.a. (t.e.) for the full-time Lecturer position. Application forms and further particulars from the Academic Registrar, University of Cambridge, Ref. No. 4134/88/57, Closing date for applications is 17th June 1988.

**LECTURES
IN
ECONOMICS**

Applications are invited from any field in the Department of Economics for appointment as Lecturer for 1965. The salary is in the range of £15,503 per annum (review).

Applications (including a curriculum vitae and the names and addresses of three persons who should reach the Lecturer through the University) should be sent to the Wivenhoe House, 9, of

This temporary Geography is available to the academic staff from 1 September 1984 as a result of the absence of an established member of staff. It is hoped to recruit a staff member to the field of Physical Geography with special reference to the Tropics and with an interest in historical geography.

Salary range is £13,506 per annum plus pension, qualifications and experience.

Further particulars can be obtained from the Personnel Office.

Detailed applications should be submitted to the Chinese Consulate in London, 10, Grosvenor Gardens, London, W1A 3QJ, by 15 January 1983. The names of successful applicants will be published in the Hong Kong Press. The names of unsuccessful applicants will not be published. The names of successful applicants will be published in the Hong Kong Press. The names of unsuccessful applicants will not be published.

Detailed applications (two copies with curriculum vitae, list of references and names and addresses of three referees and a statement of how you take up post should be received by: The Registrar, New South Wales University of Technology, Box 793, Launceston, Tasmania 7250, Australia by 13 June 1987.

The person appointed will be expected to take responsibility for teaching and supervision in Physics under the general direction of the Professor. The position would be an advantageous one for an experienced applicant as a stepping stone to a position of Quaternary Research. Salary on the scale for persons with 3 to 6 years experience is £8.5.10 to £11.5.10. Initial appointment will be made within the range £8.5.10 to £10.5.10 annually.

Further particulars and application forms can be obtained from The Regional Staffing Committee, The College of Wales, Aberystwyth, King Street, Aberystwyth, Ceredigion, Wales.

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كتاب من الأصول

Don's diary

Monday

Vice chancellors' secretaries hardly qualify as dons, but they have a great deal in common with them. Week begins with gathering of senior administrators and academics reviewing vacant posts: decide that they can wait for coffee until they return to their own offices, but meeting drags on and finally take pity and carry in tray with ill grace. Wash up.

Answer numerous telephone calls seeking the vice chancellor's presence at job interviews - what with the "new blood" posts and various research contracts on the go, to say nothing of retirements and resignations, the registrar's department is dealing with over 30 academic-related jobs at the moment. Suggest to irate social science professor that he interview his candidate in August, since the diary seems full until then.

Visiting academic to computer science department comes for pre-lunch drink with vice chancellor. Wash up. Spend afternoon on accumulated correspondence and trundle home to find family eating toast and looking accusingly, saying: "You know I have to go out on Monday evenings." Ignore family and feed cats - much more appreciative.

Tuesday

Visit from student organizing pot-plant society. Listen patiently to tale and then point him in direction of finance officer. Finance officer proceeds to explain to tax for expedition - credentials, fortunately ascertained on previous visit. Agrees to help solve problem - sense of satisfaction and cheer all round. Would that all problems were so easily resolved.

Check arrangements for visit by secretary of major grant-awarding research council; his office still doesn't seem to know what he wants to look at so make decision for him - this will undoubtedly come home to roost since the unvisited departments will feel slighted. Minute meeting of university orchestral concert committee - still trying to find sponsor for the first concert of the four planned for next season.

Rush home in time to feed family promptly, only to find that husband has eaten large lunch, teenage daughter is dishing (again) and son has arranged to go back to school to play jazz and is therefore already eating everything he can find. Feed cats. Are all working mothers in a state of permanent guilt?

Wednesday

Assemble papers for vice chancellor's visit to Committee of Vice Chancellors and Principals meeting on Friday. The extraordinary numbering system causes endless fury - if not filed numerically according to category (VC - yes, I understand that. N - for note and BM - for what? BM means British Museum to me) they disappear without trace. However, today is a good day and the job is done in minutes. Book train ticket and reserve seat. Vice chancellor then changes mind about when he wishes to go and come back, so have to unbook and unreserve. Take first line over his engagements for the rest of the day - no wriggling out of things allowed after that.

Vice chancellor leaves early to entertain student junior common room committee, while I devise guest list for next staff lunch party - endless opportunity to put one's foot in it here, since it is necessary to know not only who is feuding with who but, also, who is

married to who - the chance of real embarrassment is considerable.

Wash up extraordinary large number of cups and glasses since the administrative junkie has had working lunch in the vice chancellor's room; never mind, they left some grapes in the fruit bowl, so a small reward falls to the skivvy. Salad supper (no hassle!) and then out to a meeting of the local conservation group, currently battling over proposals to open a chip shop.

Thursday

Start day with put-out daughter who has to walk to school since I am going a different way to work in order to collect august visitor from research council. Arrive early at hotel but august visitor detained on telephone and we discover when we arrive at university that he has left his briefcase behind. Check arrangements for his reception, including switching on the overhead projector, before getting back in car and going to the hotel to collect the forgotten briefcase. Parry calls from the august visitor's Government masters while he is lecturing - can hardly believe that no one has told them they'll have to wait to speak to him before this - and then leave him to converse with SW1 while I check the lunch arrangements which are admirable as usual.

Plough through normal office load - letters, telephone calls, diary, student notes etc. and find time to make after-noon tea. Do not wash up. Home, early since there's no point in driving in the way back to the university, so have thrill of loading washer. Cats convinced it's supper-time an hour early; children likewise. Wonder what working mothers did before freezers were invented.

Friday

Vice chancellor safely in London so spend interesting day with student commodity action projects officer mounting a display of photographs eventually destined for the Association of University Teachers exhibition on universities at the House of Commons. This seemingly minor task in fact takes nearly four hours but the results are well worthwhile. This student group provides holidays for deprived children for six weeks in the summer and raises nearly £10,000 a year to make this possible. They deserve all the help they can get.

Make numerous appointments in the vice chancellor's already over-full diary, check arrangements for two lunches next week, do some invitations and talk with the printing unit about designing something pink and attractive in the way of an invitation card for the university pensioners' strawberry tea. Letter from chancellor today, who is paying a visit in June, about a little party to be given for him - he wants to meet our resident telly don, so I must remember to include him on the list.

Head for home at the end of yet another busy and varied week - no two are ever alike. Next week I have the pleasure of sending out letters about early retirement to every member of staff aged 50 and over, which will undoubtedly produce a spate of resignations. Never mind, that's next week. First of all we've got people to dinner tomorrow and a visit to the in-laws on Sunday. Let's concentrate on that first.

Ray Nixon

The author is secretary to the vice chancellor at the University of York.

Electing to get on with the job



Patrick Nuttgens

any of the party programmes as one of the great issues of the day, like defence and nuclear power and unemployment. But it is a greater issue than might appear.

The policies of the three major parties are not all that different. We have been squeezed by the present Government and had to cut our coats according to a smaller cloth. That did not surprise anyone; education, having had a field day in the 1960s and early 1970s, had bad times coming. Nor is there any evidence that I can see that the situation will be all that different under Labour, which has made a lot of favourable noises but evaded committing itself to any major infusion of money. More interesting, but vague in its implications, is a statement by the Department of Education and Science Training.

Now that, although it is very sketchy and may be subject to change, it indicates an important point. What is the reality that faces us all the time? It is the fact that we have a situation where many of us is the possibility that we may for some years be training young people for unemployment. We watch our employment figures anxiously each year to see what has happened to our graduates. The pattern is very uneven.

It is important to us because there must be a basic relationship between work and the preparation for it. There are academics, usually in privileged institutions, who can airily remark that the employment of their graduates is no concern of theirs; all they are concerned about is the pursuit of learning and the formation of the mind. That was fine when you knew there was a job at the end but it worries students no end if there isn't. Any

responsible teacher in higher education nowadays must speculate about work and the preparation for it.

I find myself constantly writing and talking about this subject and am convinced that it is a crucial issue in the development of educational ideas. We need, as I have in other places written, a new concept of work, a synoptic view, which brings into the meaning of the word not only paid employment but all sorts of activities that make up the varied world of human endeavour. That includes many activities that some people think of as recreation. Notably works of creation - the arts and crafts. They may look like leisure. Just try them and find how demanding they are, for relatively little financial reward.

The academic institutions will have to do some massive thinking about the nature of work and its future, however unused to work some of them may seem to be, because nobody else will. Unemployment in the present sense is not coming to an end and there is no reason why it should. An advanced technological society should not have to spend time on repetitive drudgery; we should have much more leisure, not less. The absurdity is that some people have lots of it and the rest of us are working longer hours than ever before.

You might agree this is a matter of the utmost urgency, but it is a matter of the fact that politicians seem unable to address themselves to the subject other than expressing horror and blaming someone else. Nor will the unions come near solving anything. Their history ties them in knots. They can do little but cry out for full employment for their own members at the expense of everyone else. Only Clive Jenkins, assisted by Barrie Sherman, seems to have put his mind to the problem and published anything worthwhile.

On the other hand, among the non-politicians, a great deal of thought and energy is starting to show results. One of the tantalizing questions of our time is whether the Manpower Services Commission is in fact doing the work of the Department of Education and Science. The DES having concentrated on provision for the kids who are going to succeed in conventional education and go on to higher education, the MSC has the task of looking to the needs of the children who will go nowhere near a higher education and need employment. That is the majority, more than four fifths.

They are the test of our system. The evidence of the world in the last 100 years shows that no country can succeed in an industrial and socially committed era that does not have an educated and competent population. There are encouraging signs that in the last few years the message has come across even here. We are beginning to look at the needs of the majority and of the society that needs them and is going to employ them. We are on the threshold of great changes. We will make them whoever gets into power.

and vocational education initiative - condemned by Labour elitists as a return to bipartite secondary education - is, in the main, to the same "low achievers".

A new vocational examination has been launched, when it could be argued that the middle classes' only interest lies in O levels, which in these difficult days more than ever convey legitimacy and carry the endorsement of employers.

Yet the Government has preferred the approach of the Manpower Services Commission. The educational world may see the Youth Training Scheme as a last-ditch option and would prefer young people to stay on at school. But though middle-class families may tend to agree, the Government has been rather cool and placed more emphasis on employment-based experience.

Loans for undergraduates were eventually perceived as damaging to middle-class interests and dropped. But the decision to contract universities places is not understandable in hard political terms.

Education prospects ultimately rest of course on successful management of the economy; it might be for Mr. Kinnoch to dream of spending £2 billion on education, but I wouldn't give much for his prospects. With proposals for increasing government borrowing to £20 billion a year, a Labour Government would face an immediate collapse of the pound, rampant inflation and spiralling interest rates. Can today's fantasy really be tomorrow's reality?

LETTERS TO THE EDITOR

University autonomy and postgraduate students

Sir, - With regard to "Rejects who want to know why" (THESE, April 15) and related correspondence, it seems extraordinary that the universities of Hull and Leeds should act in such an unbecoming fashion towards their PhD students. Moreover, the universities' stand is untenable given the constraints of contractual and administrative law by which they are bound.

A university contracts with its PhD student to provide proper supervision and a fair and competent examination. It also has a legal obligation to deal justly with the student's complaints relating to breaches of those contractual duties. When, as in the reported Hull cases, a student alleges incompetence or bias or error on the part of the examiners, he, as well as his supervisor whose professional competence is undoubtedly brought into question by the failure of the thesis, must be entitled to receive detailed examiners' reports. If either the student or his supervisor disagrees with the examiners' judgments, they should have the right to have the work reassessed by an independent moderator. A pupil, or his teacher can claim this right for O and A level examinations. Surely universities cannot argue they are above such basic and established principles of justice? Certainly, when the allegation is one of

"legal guarantee of... income" prior to the Registration Acts, which he claims weakened this guarantee in some way. Again, this statement is nonsensical, since the Registration Acts were promoted by the RIBA with the ultimate objective of guaranteeing income by further legal measures restricting the practice of architecture to architects. To quote from the RIBA Journal LV, 488, p 488 "The RIBA has now reached the end of the first stage of its registration policy which has required so much effort."

Architectural status

Sir, - Following Mr. Healey's letter criticising Professor T. Markus's view of architecture expressed in THESE April 29 ("architecture under stress") I would like to point out several errors of fact in the same article. Professor Markus states that under one of his imagined "pacts" with the Establishment the architectural profession were given "legal guarantees of title, status, income and entry qualifications" and in the next paragraph goes on to say "In fact the Architects Registration Act, from 1931 onwards, was a serious attempt to relate to education, entry and title, by transferring powers to ARCUK."

This statement is nonsensical in relation to title, for the title "architect" was legally protected for the first time by the Architects Registration Act, 1931, which restricted its legal use to those on the register maintained by the 1931 Act, but until 1938 was voluntary. Thus in respect of title the Architects Registration Act of 1931 to 1938 was a strengthening of the profession's position vis-à-vis title. Since up until 1938 anyone could call themselves an architect, whether or not they had undergone any training, the 1938 Act was likewise a strengthening of the profession's position vis-à-vis title. Since the 1938 Act set up a board of Architectural Education and a procedure for recognizing degrees and diplomas (without the provision of this Act there would be no reason for anyone to study architecture full-time in a university today), Professor Markus refers to the profession having some

"legal guarantee of... income" prior to the Registration Acts, which he claims weakened this guarantee in some way. Again, this statement is nonsensical, since the Registration Acts were promoted by the RIBA with the ultimate objective of guaranteeing income by further legal measures restricting the practice of architecture to architects. To quote from the RIBA Journal LV, 488, p 488 "The RIBA has now reached the end of the first stage of its registration policy which has required so much effort."

The ultimate objective is naturally to ensure that anyone performing the service of a legal enactment found in some American States. At present in this country anyone can design and supervise the erection of a building project. This is still the case. Over half the buildings put up in Britain are not designed by architects. Architects have to compete with architectural technicians, building surveyors and civil engineers, and thus have never had a guaranteed income (unlike architects in Belgium who must be employed by law and make comfortable incomes merely by signing drawings prepared by others).

Apart from the fact that British architects have never had a legally guaranteed income as Professor Markus infers, their supposed "pact" with the Establishment has been singularly unsuccessful, as, next to engineering, architecture is consistently been the second worst-paid profession.

DEREK JAMES COURT,
Winston Churchill,
60 The Avenue,
Bromley, Kent.

Dance steps

Sir, - We feel that the article "Dancers and the ILEA" (THESE, May 13) contains certain inaccuracies. You state that the Central School of Ballet is an offshoot of the Rambert School of Ballet. This is not the case and in fact it has no connexion whatsoever with either Rambert School of Ballet, or our parent company, Ballet Rambert.

You state that most staff were unhappy about the move to Twickenham. This is not so. Only two teaching staff with experience at the Rambert School of one year or more chose not to make the transfer to the new premises.

The schools are not identical. There are many differences in the curriculum, and Rambert School offers students the opportunity (in conjunction with

the West London Institute of Higher Education) to study from a choice of four subjects to A level. We feel that with the merger of the Rambert School of Ballet and the new Ballet Rambert Academy, a unique School of Ballet, a unique professional education authorities - a professional dance course in the public sector. At the same time, it will be one of only three schools in the country which will have a course and artistic policy formulated in cooperation with a major dance company - The Ballet Rambert.

Yours faithfully,
BRIGITTE KELLY,
Director,
Rambert School of Ballet.
GARY SHERWOOD,
Director,
Rambert Academy.

Open and shut

Sir, - In your survey on publishing (Books in a Bind, THESE, April 8) Paul Rafter stated that in 1980 "Casell" (sic) had to close its books division. This is not true. In 1981, Casell sold its general books division, but continued its educational, medical and reference publishing.

© 1982 Macmillan Inc of New York sold the bulk of Casell's business to CBS, but it retained the publishing rights to Casell bilingual dictionaries. Yours faithfully,

ROBERT KIERNAN,
Managing Director,
Casell Ltd,
1 Vincent Square,
London SW1P 2PN

Lord Beloff and the Berrill report

Sir, - The Berrill report on the Industrial Relations Research Unit at Warwick University is a straightforward and uncomplicated criticism of Lord Beloff. The report is a wholesome vindication of the Warwick unit and a total denial of Lord Beloff's accusations. The report concludes on a very firm note: the charge of bias "has not been substantiated".

For most readers of the report there is likely to be a total denial of Lord Beloff's credibility in this affair. What are we to say of a man who made sweeping allegations about a group of research workers; who repeated the charges in a House of Lords debate (June 30 1982); but who admitted to the Berrill committee, in their words, "that he had no expert knowledge of industrial relations and was not familiar with the Unit's output?" (Paragraph 4, 12, emphasis added). So Lord Beloff had read little or none of the publications of the Industrial Relations Unit; certainly did not regard himself as in any way a specialist in their field of research; and yet was willing to submit to Rothschild a letter which contained a clearly stated and vigorously expressed condemnation of bias.

Since the Berrill committee has rejected in such unequivocal terms the accusation of bias, what does Lord Beloff do now? A public recantation and at the same time an apology to the members of the Warwick Unit? Lord Beloff, Rothschild wrote, is "an eminent member of the British Academy"; but it will not only be his fellow academicians who will await with interest on the present affair.

There are, however, other matters of principle that deserve discussion. Rothschild made it clear that he had not time to inquire into Lord Beloff's accusations, yet Rothschild was pres-

sented that they should be looked into. Are we to expect similar treatment of similar accusations in the future? "Bias" in the social sciences is more often than not a different evaluation of the same facts from your own. The Council of Social Science Research Council was admittedly put in a difficult position by Rothschild's recommendation of an enquiry; but the SSRC was fully aware of what "an impartial examination, in depth" would reveal. The Warwick Unit had already been validated by two review panels in 1974 and 1980 under normal SSRC review procedures. Was it really necessary for the council of the SSRC to run for cover as it did? It already had abundant evidence to disprove Lord Beloff's unsubstantiated accusations.

We are all aware that the social sciences are under increasing attack, and no doubt it is reasonable to expect the attacks to increase in range and depth. Can we expect to see the leading members of the SSRC - especially those who have accepted membership of the council - to stand up and defend its own constituency in public? But these are matters for continuing debate. In the immediate future it is not unreasonable to expect a statement from Lord Beloff. Will he now, given the conclusions of the Berrill report, offer a public announcement that he was misled in the matter of the Warwick Unit and proffer an apology, in a collective sense, to all the members of the unit? JOHN SAVILE,
Chairman, Council for Academic Freedom and Democracy.

Games people play
Sir, - I would like to comment on Steve Duck's review of Colman's book on *Game Theory and Experimental Games* (THESE, April 18). Duck is quite right, these games are not about real-life behaviour, but that is to criticise an entire field, not this particular book. I think that the book is a masterly presentation of a very difficult area; in addition the author has attempted to carry out more realistic versions of some of the games. Social psychology is short of theories which make novel predictions; the various game models do make a range of interesting and non-obvious predictions, which have been of interest to economists, students of elections, and military strategists.

Yours faithfully,
MICHAEL ARGYLE,
Department of Experimental Psychology,
University of Oxford.

Letters for publication should arrive by Tuesday morning. They should be as short as possible, and written on one side of the paper. The editor reserves the right to cut or amend them if necessary.

DR MICHAEL TRACEY,
Head, Broadcasting Research Unit,
British Film Institute.

Union view

Hitting the campaign trail

As this column appears, most of the active membership of the National Association of Teachers in Further and Higher Education will be assembling in Blackpool for the 1983 annual conference, against a background of a general election with polling day less than a fortnight away. Whatever the motions and issues on the official order paper before the conference the hidden agenda will inevitably be that of the election and educational and trade union issues it raises.

In the period when the date of the election was still unknown, Natfhe and its partners in the educational opportunities campaign (ASTMS, AUT, Nalge, Nupe and NUS) had already determined that post-school education ought to become a central issue within the election. For the first time, therefore, Natfhe has entered a general election period campaigning actively on behalf of the post-school education sector. We have sent out to branches a special election mailing with leaflets, posters, stickers, questions to be directed at the candidates in the election and background briefing materials all designed to assist members in campaigning in the constituencies.

We are making a particular effort to leaflet and campaign in constituencies where the post-school education vote is numerically significant - where there are one or more large educational institutions within the constituency. Candidates have traditionally made efforts to tour large factories or industrial areas within their constituencies. We hope the importance of the post-school sector vote will come to be recognized in this election.



There is evidence for opinion polls that education is regarded as an important issue by the electorate. We want to capitalize upon that to bring home to our members, to those working in colleges, polytechnics, universities and to the wider community, the significance and importance of educational issues before they cast their votes. This campaign is perhaps inevitably being portrayed in the media as a campaign against the Conservative government. We make no bones about the fact that this is a political campaign but it is not party political in the sense of being for or against particular political parties or candidates. We are as much concerned, for example, with the diversity of opinion among Conservative candidates on such issues as student loans, educational maintenance allowances and access to post-school education as we are in the differences between the parties on any or all of these issues. We are asking candidates their individual views as well as asking for the views of their party.

There are already clear signs that the electorate is concerned. Those whose children are still in schools are worried about their future opportunities. Will the Youth Training Scheme really deliver a quality programme? Will the local further education college be able to provide enough places to ensure their children will get on? Will the polytechnics or universities have places available for all qualified students by the time their children get their A levels?

This is something of a departure for Natfhe, as it is for a number of the unions involved in the educational opportunities campaign. When the election is over, irrespective of the result, we shall count our victories in the number of meetings that have been held and the number of times candidates have faced a barrage of questions concerning the critical state of the post-school education sector and the need for proper resources to enable it to deliver to the constituents of this country the quality of education that they have every right to expect.

Joan Bocock

The author is assistant secretary for higher education at the National Association of Teachers in Further and Higher Education.

Yours sincerely,
DR MICHAEL TRACEY,
Head, Broadcasting Research Unit,
British Film Institute.